MARCH 8, 2021 BY JASON K. RESCH

# Why does anything exist?

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Why does anything exist? Why is there something rather than nothing? Wouldn't nothing have been so much easier?

This question has awed and mystified people throughout time.

> The first question which we have a right to ask will be, "Why is there something rather than nothing?"
>
> — *Gottfried Wilhelm Leibniz in "The Principles of Nature and Grace, Based on Reason" (1714)*

> Not *how* the world is, is the mystical, but *that* it is.
>
> — *Ludwig Wittgenstein in "Treatise on Logic and Philosophy" (1921)*

> No question is more sublime than why there is a Universe: why there is something rather than nothing.
>
> — *Derek Parfit in "Why Anything? Why This?" (2008)*

Martin Heidegger called this question the "fundamental question of metaphysics." But it might as well be the fundamental question for any being — our existence poses a mystery that demands an answer.

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Something, rather than nothing. Where does it all come from? Why is there anything at all?

Every society in every time has wrestled with this dilemma. It's our most enduring question. For we all seek to know: *why we are here?*

Lacking an answer, we are like a ship adrift. Our ignorance on this question makes us like an amnesiac who awakens in a dark and strange place — knowing neither where we are, nor how we got here.

Some say without an answer to this question, we can't know anything:

> It is possible to think that one cannot answer any question if one cannot answer the question of why there is something rather than nothing. How can we know why something is (or should be) a certain way if we don't know why there is anything at all? Surely this is the first philosophical question that has to be answered.
>
> *— Robert Nozick in "Philosophical Explanations" (1981)*

With an answer to this question we could orientate ourselves. We would know our place in reality, and understand the reason behind it all. An answer to this question would tell us not only why we exist, but also what else exists, both within the universe we see and beyond.

*But can this question even be answered?*

Some have suggested the answer is unknowable.

> Who knows truly? Who here will declare whence it arose, whence this creation? The gods are subsequent to the creation of this. Who, then, knows whence it has come into being? Whence this creation has come into being; whether it was made or not; he in the highest heaven is its surveyor. Surely he knows, or perhaps he knows not.
>
> *— The Hymn of Creation in "Rig Veda" (c. 1500 B.C.)*

For most of history, the question remained beyond the possibility of being answered. But we live in a most-exciting point in time: one where this question has fallen to the progress of human knowledge.

In the past decades, results from physics, cosmology, mathematics, and computer science, have coordinated at last to solve this timeless question. We can now say, with some confidence, *why we exist*.

The answer we have is more than an idle philosophical speculation — it can be observationally tested and thereby be confirmed or falsified.

So far, observations are in agreement with this answer.

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Let us retrace humanity's steps in finding this answer, and see what this answer reveals about the nature of reality and our place in it.

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## Two Paths to Existence

One reason we find “Why does anything exist?” so difficult is that there are only two possible answers — both are repugnant to our intuition as each contradicts our commonsense understanding of the world.

Given *something* exists, either:

1. Something emerged from nothing, or
2. There are self-existent things

Did something come from nothing, or are there self-existent things?

The idea that something came out of nothing is contrary to reason. How can nothingness do, nevermind *create*, anything?

The idea that there exist self-existent things, is contrary to experience.

Everything we know appears to have a preceding cause. How could anything create itself, or exist without some creative act?

And yet, that one of these answers *must be* right seems inescapable. There's no other way to reach "*something exists*" without either starting with something at the beginning, or starting with nothing and having something emerge from nothing.

If we seek an answer to this question we have to be willing to accept an idea contrary to our commonsense understanding of the world.

But which of these paths leads to the correct answer?

## Something from Nothing?

The first of the two answers is that something emerged from nothing. But how is this possible? Does it even make sense logically?

For at least 2,500 years, humans have debated whether anything can come from nothing. The Greek philosopher Parmenides made the earliest recorded argument that "*nothing comes from nothing*."

> I will not permit thee to say or to think that [being] came from not-being; for it is impossible to think or to say that not-being is. What would then have stirred it into activity that [being] should arise from not-being later rather than earlier? So it is necessary that being either is absolutely or is not.
>
> — *Parmenides* in *"The Way of the Truth"* (c. 475 B.C.)

To decide whether existence emerging from nothingness is even logically possible, we need a precise definition of *nothing*. For instance, by 'nothing' do we mean *no things*, or do we mean *absolute nothingness*: no laws, structures, properties, or principles?

### Defining Nothing

> It might have been true that nothing ever existed: no living beings, no stars, no atoms, not even space or time. When we think about this possibility it can seem astonishing that anything exists.
>
> — *Derek Parfit* in *"Why Anything? Why This?"* (2008)

What is *nothing*? It seems like a straightforward question. Just keep removing things until there is nothing left.

Start with the universe as it is. Wipe away all the matter and energy. Take away all the *quantum fields* of the vacuum, and any *virtual particles* popping in and out of existence. And voilà: *nothingness*.

Nothingness: reality after we delete every *thing* out of existence.

But wait, there’s still space. It still has dimensionality, and curvature. There is still time and physical law, even if there are no particles or fields left to be governed by them. Let us delete those too.

Let’s erase the volume of space, erase time, and erase physical law.

> When we say *out of nothingness* we do not mean out of the vacuum of physics. The vacuum of physics is loaded with geometrical structure and vacuum fluctuations and virtual pairs of particles. The Universe is already in existence when we have such a vacuum.
>
> No, when we speak of nothingness we mean nothingness: neither structure, nor law, nor plan.
>
> *— John Archibald Wheeler in “Law Without Law” (1983)*

What are we left with? If we eliminate all the dimensions of space and time, we’re left with a zero-dimensional, changeless *point*.

But a point is still a thing. Can we delete that too?

### Kinds of Nothing

So long as we operate from a theory of *geometry*, we can’t define nothingness as anything less than a space of zero-dimensionality.

This leaves us with a point.

If we want to eliminate the point, we need to define nothingness not as a space of zero dimensionality, but as something *non-geometric*. For this, we must define nothingness in terms of some other theory.

But any theory we might choose has its own *notion of nothing*. In other words, nothingness is theory-dependent.

| Theory | Notion of Nothing |
|---|---|

| | |
|---|---|
| Physics | No energy: the *vacuum* |
| Geometry | No dimensionality: *a point* |
| Set theory | No elements: the *empty set* |
| Arithmetic | No magnitude: *zero* |
| Information theory | No information: zero *bits* |

There is an unlimited number of possible theoretical systems. Does this mean there are also unlimited conceptions of nothing?

> Nothing is simple. Not even Nothing.
>
> *— Bruno Marchal*

Might there be a true nothing — one with no laws, principles, nor any theory behind it? Or might every conception of nothing require a theory of things in order to declare that there are none of them?

### Rules for Nothing

Wheeler called for absolute nothingness: “neither structure, nor law, nor plan.” But is this kind of absolute nothing achievable?

For instance, the *law of identity* holds that for any **A**, “**A** = **A**“. Without such a rule, there would be nothing to ensure that *nothing* stayed *nothing*, and didn’t later become equal to *something*.

For nothingness to persist, the rules of logic must apply. Further, if nothingness is the state where “zero things exist”, then the rules of arithmetic must also hold to ensure that “0 = 0” rather than “0 = 1”.

For there to remain no things requires some minimum set of laws. There might be *no things* as such, but the idea of *no laws* seems incompatible with there being and remaining *no things*.

> In the beginning, there was only truth, logic and their relation. No possible reality can do without them.
>
> *— C. W. Rietdijk in “Four-dimensional reality continued” (2018)*

If there were no logic, what logic or reason ensures that nothing comes from nothing? If there were no laws, what law or principle would prohibit the spontaneous emergence of a universe?

### The Trouble with Nothing

Can we define nothing in a way that suppresses all forms of existence?

That is, to not only have no *things*, but an *absolute nothingness* — a nothingness of no objects, neither abstract nor concrete, no properties, no laws, no principles, and no information content?

Or is this a fool's errand? One that leads to a logical inconsistency and thus an impossibility? Might nothingness be, in some sense, *unstable*?

Perhaps *nothingness*, by its own nature, is untenable. Image Credit: Wikimedia

If *absolute nothingness* can be shown to be an impossible dream, it will advance us on our path to discover the reason for existence. It might even reveal some self-existent or necessarily-existent thing.

### Properties of Nothing

Any time we delete something from reality, we leave something else in its place. When we deleted matter, we created a vacuum. When we eliminated light, we created darkness. When we removed heat we created cold. When we deleted space, we created a point.

> The idea of nothingness has not one jot more meaning than a square circle. The absence of one thing always being the presence of another — which we prefer to leave aside because it is not the thing that interests us or the thing we were expecting — suppression is never anything more than substitution, a two-sided operation which we agree to look at from one side only: so that the idea of the absolution of everything is self-destructive, inconceivable; it is a pseudo-idea, a mirage conjured by our own imagination.
>
> *— Henri Bergson in "The Two Sources of Morality and Religion" (1935)*

If every deletion is a substitution for something else, then a pure nothing, devoid of any properties whatever, is impossible.

Whac-A-Mole CHAMP!!!
FROG BOG

Eliminating every thing and property from reality might be like a game of Whac-A-Mole — where each time we remove one property or thing, another pops up in its place.

So while we might succeed in removing all material things from reality, we could not remove all properties from reality.

The existence of *properties* appears inescapable.

Nothingness, of any kind will always have some description and properties, even when it's just a cold, dark, empty, vacuum.

But how far can we go in eliminating properties?

For instance, if we define nothingness as the *empty set* from *set theory*, what properties would remain? Temperature has no meaning for a set.

Would any properties remain for such a *nothing*?

### Properties of Zero

Every conception and definition of nothing contains at its heart: *zero*. For any conception of a thing, nothing will always be zero of them.

The vacuum: *zero energy*. Geometry: *zero dimensionality*. The empty set: *zero elements*. Arithmetic: *zero magnitude*. Information theory: *zero bits*.

If zero is a universal property of nothing, we must ask: what are the properties of zero? What does zero bring to the table of reality?

Zero has many properties. It's *even*, it's the *additive identity*, it's the only number that's neither *positive* nor *negative*. It's the number of elements in the *empty set* and the number of even *primes* greater than two.

In fact, zero has more properties than we could list if we recruited all the atoms in the observable universe to serve as paper and ink. This effort is doomed because zero's properties are *infinite* in number.

A small patch of the observable universe. There are more properties of zero than there are atoms within all the galaxies visible in this picture (around $7.74 \times 10^{72}$ atoms.)

Zero's *factors* couldn't be listed, as zero has infinitely many of them. Every number evenly divides zero and hence is one of zero's factors.

Aside from zero's factors, we could list infinite trivial properties of zero: zero is "*the difference between 1 and 1*" and it's "*the difference between 2 and 2*" and it's "*the difference between 3 and 3*" and so on.

But there are also an infinite number of *non-trivial* properties of zero. Some are even beyond the understanding of today's mathematicians. As an example, mathematicians have for centuries wondered:

> *are there even numbers >2 that aren't the sum of two primes?*

This question is known as *Goldbach's conjecture* after Christian Goldbach who posed it in 1742. Nearly three centuries later, it remains unsolved.

Between 2000 and 2002, a $1,000,000 prize was offered to anyone who could answer this question. All this money to settle a question about a property of zero. To decide: is *zero* the number of exceptions to Goldbach's rule?

We now see why "Nothing is simple. Not even nothing." All definitions of nothing include the concept of zero. Far from being simple, zero is an object of unlimited complexity.

### An Explosion of Entities

Can zero exist in isolation — completely alone from other numbers? Or do relationships between numbers make them inseparable?

Zero's properties reference other numbers. And each of these numbers carries its own set of properties and relations to the other numbers.

Are the properties of *one* any less real than the properties of *zero*? Perhaps in a reality having no *things*, 'one' is meaningless.

In a reality containing nothing, there are no *things* as such — at least no material things. But in such a nothing, there is an abstract thing: zero.

Zero reflects the number of material things to count. But how many abstract things are there to count? There is at least one. The *one number* that exists to define the number of material things is zero.

But if we have one number and it is one thing to count, now another number exists: *one*. We then have *zero* and *one* together as the only numbers. But now we have two numbers. Now *two* exists…

This is how numbers are defined in *set theory*. Within set theory, each number is formed as the set of all previous sets. The process starts with the *empty set* (represented by { } or ∅) which contains zero things.

- $0 = \{ \} = \emptyset$
- $1 = \{ 0 \} = \{\emptyset\}$
- $2 = \{ 0, 1 \} = \{ \emptyset, \{\emptyset\} \}$
- $3 = \{ 0, 1, 2 \} = \{ \emptyset, \{\emptyset\} , \{\emptyset, \{\emptyset\}\} \}$
- $4 = \{ 0, 1, 2, 3 \} = \{ \emptyset, \{\emptyset\}, \{\emptyset, \{\emptyset\}\}, \{\emptyset, \{\emptyset\}, \{\emptyset, \{\emptyset\}\}\} \}$

It seems once a single abstract number is admitted, each next number comes to life as the count of the abstract numbers that preceded it. Is there any way to stop the proliferation of infinite abstract entities?

Once the abstract entity *zero* exists, do all the other numbers inevitably follow?

If zero exists by virtue of there being zero things to count, then on that basis, shouldn't every number have the same right to exist by virtue of being the number of preceding numbers there are to count?

> The existence of any number, in virtue of its properties, entails the existence of all the others i.e. a system of mathematics couldn't exist bereft only of the number, say, 42; and the existence of any number, in virtue of the full set of its properties/structural relationships, entails the existence of every other number.
>
> *— David Pearce in "Why Does Anything Exist?" (1995)*

Set theory and building up numbers from the empty set are modern ideas — they appeared around the turn of the 20th century. Yet the idea of numbers giving rise to themselves goes back much farther.

> The Tao gives birth to One.
> One gives birth to Two.
> Two gives birth to Three.
> Three gives birth to all things.
>
> *— Laozi in chapter 42 of "Tao Te Ching" (c. 600 B.C.)*

### A True Nothing

Whenever we specify or define nothing, we invoke theories and concepts which, in turn, lead to properties and abstract entities.

But what if we forgo even specifying nothing? Might this be a path to achieve absolute nothingness? A true nothing, having:

- No things, no objects
- No definitions, no properties
- No abstract entities, no concepts
- No sets, no numbers
- No set theory, no mathematics
- No specifications, No information

Avoiding all this we have no theories of any kind. We are left with a plain and simple, pure, unadulterated *nothing at all*.

But again this leads to trouble. There's a problem with this kind of nothing — a *nothing* of no information is identical to *everything*.

> We note that the collection of all possible descriptions has zero complexity, or information content. This is a consequence of algorithmic information theory, the fundamental theory of computer science. There is a mathematical equivalence between the Everything, as represented by this collection of all possible descriptions and Nothing, a state of no information.
>
> *— Russell Standish in "Theory of Nothing" (2006)*

At first this sounds counter-intuitive, if not outright wrong. Yet this consequence is something we intuitively understand in other contexts.

Let's review three such cases: *Unsculpted Marble*, an *Unsent E-mail*, and the *Library of Babel*. Each demonstrates an equivalence between the *nothing* of no specification, and the *everything* of all possibilities.

### Unsculpted Marble

Before marked by a sculptor's chisel, a block of marble contains every figure — or at least every figure fitting the dimensions of the block.

On the left: blocks of Marble from a quarry in Carrara. On the right: Michelangelo's Pietà

Michelangelo's Pietà was in the block before he uncovered it. It was there with all the other figures. To bring forth the Pietà alone, required the addition of information. Michelangelo had to uniquely specify the Pietà from among the set of all possibilities.

> There is a beautiful angel in that block of marble, and I am going to find it? All I have to do is to knock off the outside pieces of marble, and be very careful not to cut into the angel with my chisel. In a month or so you will see how beautiful it is.
>
> *— George F. Pentecost in "The Angel in the Marble" (1883)*

This specification requires adding information to the block, by way of chisel marks. It is only in the absence of this information — in the absence of any chisel marks — that all possible figures remain.

In this sense, information is subtractive rather than additive. When information specifies, it eliminates from the preexisting infinite set of possibilities. Absent such information, all possibilities remain.

#### An Unsent E-mail

You are at your desk, awaiting an important e-mail from your boss.

Before this message arrives you know nothing about the contents of this e-mail — you are in a state of having no information.

But there is one thing you know before the e-mail arrives: the e-mail will be one message from among the infinite set of possible e-mails.

Only after the e-mail arrives in your inbox do you learn which from among the infinite set of messages the boss chose to send you.

But consider the case where instead of sending a single e-mail, the boss sent you every possible e-mail. Would you be able to learn anything from these infinite messages about what your boss wants?

The lack of specification in the infinite set of messages is equal to the lack of specification that existed prior to receiving anything. Both states are equivalently unspecified. Therefore, both represent states of complete ignorance and a state of having zero information.

Having every message is as informative as having no message.

### The Library of Babel

One of the best illustrations of the uselessness of all information comes from Jorge Luis Borges's concept of a 'Total Library', described in his short story *The Library of Babel*.

This library is described as follows:

> The universe (which others call the Library) is composed of an indefinite and perhaps infinite number of hexagonal galleries, with vast air shafts between, surrounded by very low railings. From any of the hexagons one can see, interminably, the upper and lower floors. [...]
>
> There are five shelves for each of the hexagon's walls; each shelf contains thirty-five books of uniform format; each book is of four hundred and ten pages; each page, of forty lines, each line, of some eighty letters which are black in color. [...]
>
> This thinker observed that all the books, no matter how diverse they might be, are made up of the same elements: the space, the period, the comma, the twenty-two letters of the alphabet. He also alleged a fact which travelers have confirmed: *In the vast Library there are no two identical books*. From these two incontrovertible premises he deduced that the Library is total and that its shelves register all the possible combinations of the twenty-odd orthographical symbols.
>
> — *Jorge Luis Borges* in *"The Library of Babel" (1941)*

From the provided information, we can calculate the number of books in this library. This total library contains every possible 410-page book, representing every possible arrangement of 25 characters.

Each page, with 40 lines and 80 characters, contains 3,200 characters. Each book, with 410 pages, contains $410 \times 3{,}200 = 1{,}312{,}000$ characters. With an alphabet of 25 characters, this gives $25^{1{,}312{,}000}$ possible books.

This number is 25 multiplied by itself over a million times. To put its magnitude in context, the number of atoms in the observable universe is *only* $25^{57}$ or 25 multiplied by itself 57 times.

The *Library of Babel*, containing every 410-page book, seems to go on forever.
Image Source: The Long Room in The Old Library at Trinity College

This library is a great treasure. For in this library we can find every book, article, poem, and novel ever written, or that could be written.

We'll find descriptions of every scientific theory: from Newton's *Principia*, to Einstein's *Relativity*, to the presently unknown theory of *quantum gravity*. We'll find blueprints to world-changing technologies not yet invented based on principles not yet discovered.

This library possesses the greatest works of literature: the complete works of Shakespeare, Dickens, and Tolstoy. It also has every work yet to be written: the completed Game of Thrones series, as well as the unfinished works of Tolkien, Hemingway, and Twain.

The library has the untold histories of every civilization, including civilizations now lost to time. It has the contents of every scroll burned in the fire of Alexandria. The library has biographies of every person who's ever lived — and even biographies of those yet to be born.

What could be more valuable than this boundless trove of information, with its complete knowledge, its answers to every mystery, and its articulated solutions to every problem?

This is where the equivalence between all information and no information rears its ugly head. It renders the library worthless.

There are issues with this library. To start, for every valid theory, technology, history, and biography in the library, there are countless others that are subtly wrong, inaccurate, or utterly bogus.

Worse, finding any book with more than a few grammatically sensible words is next to impossible. Most books are pure gibberish (or *babble*) — indistinguishable from random sequences of characters.

A typical page from a book in the Library of Babel. Here, English-sounding words are highlighted, but these are no more frequent than random chance predicts.

Perhaps all hope is not lost. Since this library contains every possible book, surely this library contains books that serve as indexes to find all the other meaningful and sensible books in the library.

But this dream is also impossible.

Given the number of books, it’s impossible to uniquely reference any other book with a descriptor shorter than the length of the book. Thus it takes all 410 pages to reference a specific book in this library.

Due to its completeness, the library itself is the most compact catalog of all the books in the library. In other words, a *card-catalog* of the library would be the library itself.

What if we organize the books somehow, such as by sorting them in alphabetical order? Then finding any particular book would be easy.

This too suffers from a pathological breakdown.

While this makes it easy to find any particular book, the difficulty shifts from finding the book to deciding which book we want to find.

This is a consequence of the library having every possible book. As one seeks a book of interest, one is faced with 25 choices: to choose which of the 25 characters is next in the content of the book we seek.

During the search, the seeker must choose each next letter, and must do this for all 1,312,000 characters in the book. Thus, finding a book in this library is as difficult as writing the book in the first place!

In a way, we already have access to this library — as we are already free to put down any sequence of characters we want, and thus "find" a book that is already present somewhere in this total library.

Thus, this library provides no new knowledge or information. Its set of all books is as helpful to us as if it had no books. And so a total library offers nothing. It's equivalent to having no information at all.

You can explore this frustrating enigma of the Library of Babel. Jonathan Basile created an online version at libraryofbabel.info.

### Everything From Nothing?

*Information theory* reveals the equivalence between the *totality* of all information and the *nothingness* of zero information. Both lack any specification. Both are completely uninformative. Both contain within them the complete and infinite set of every possibility.

We've seen this equivalence first-hand. We saw it in the unsculpted block of marble, in the unsent e-mail, and in the Library of Babel.

So is a nothing of no specification, a nothing or an everything?

### Less Information, More Reality

How much information is in the Library of Babel?

To determine this, we need only consider what is the shortest description that can generate the content of the library.

For instance:

> A library containing one of each possible 410-page book with 3,200 characters per page and a fixed alphabet of 25 characters.

The preceding description for the library is 125 characters long. There could be shorter descriptions, but this sets an upper-bound for the information content of the Library of Babel.

It takes next to no information to describe the vast Library of Babel. Paradoxically, there's more information in a single page from a single book in the Library, than in the entire library itself!

How could this be? How can there be less information in the library as a whole than there is in a single book or page from the library?

This is a consequence of *algorithmic information theory*, which includes the science of *data compression*. It reveals that it is simpler (in terms of needing a shorter description) to generate every book in the library than it is to generate only a single book, or a single page of a book in the library.

A shorter, less specific, and more general description casts a wider net:

| Thing Specified | Required Information |
|---|---|
| A single book | 1,312,000 characters |
| The Library of Babel | 125 characters |
| "All possible books" | 18 characters |

The description "All possible books" needs fewer characters than the description of the Library of Babel, but it defines a much larger set of books, in fact, it defines an infinite set of books, of all possible lengths and character sets. The Library of Babel, though vast, was still finite.

Might the same apply to our universe and reality?

To describe one universe like ours requires a vast amount of information. It requires specifying not only the physical laws, but also the position, direction, and speed of every particle in the universe.

This is estimated to require on the order of $10^{90}$ bits.

Yet to specify every possible universe of our kind — a *multiverse* of every possible arrangement of particles ruled by our laws of physics — needs much less information.

Such a multiverse requires only the information to define the physical laws, particle types, fundamental forces and constants of nature.

This can be done in just a few pages of equations.

The great equations of physics which define the rules of our universe fit on a few pages.
Image Credit: Max Tegmark

Describing our specific universe is like describing a specific book from the Library of Babel. It needs more information than the library itself.

In theories such as the *string theory landscape*, the constants of nature are not specified by the theory, leading to an even greater multiverse consisting of every possible universe having every set of possible values for the constants of nature (e.g. different values for things like the electron mass and the strength of electromagnetism).

There are reasons to suspect this, or something like it is true. For one, it explains why laws of physics and constants of nature appear fine-tuned for the emergence of life. (See: “*Was the universe made for life?*“)

This description of a “string theory landscape” needs less information. It might save a page by not having to include the 30 some odd constants of nature. And yet, it describes a vastly larger multiverse.

| **Thing Specified** | **Required Information** |
|---|---|
| ***Observable Universe***<br>Particle velocities<br>Physical constants<br>Physical equations | $10^{90}$ bits<br>~$10^{85}$ pages |
| ***Quantum Multiverse***<br>Physical constants<br>Physical equations | $\approx$ 144,000 bits<br>~6 pages |
| ***String Theory Landscape***<br>Physical equations | $\approx$ 120,000 bits<br>~5 pages |
| ***All physical possibility***? | 0 bits |

What happens when the length of reality’s description goes to zero?

This would leave the equations themselves unspecified — implying an even greater multiverse. This multiverse includes universes not just of every arrangement of matter, nor universes of every set of constants, but universes ruled by every kind of physical equations.

> *If* all possible string vacua, space-time geometries, masses of elementary particles and interaction strengths, and (by)laws of physics are realized, then all possible descriptions are satisfied. This is equivalent to zero information.
>
> *— David Pearce in “Why Does Anything Exist?” (1995)*

Thus, to specify all possible physical laws, all possible physical constants, for all possible universes, needs no information at all.

Might we inhabit such a *nothing*?

This is the thesis of Russell Standish's 2006 book *Theory of Nothing*.

Standish believes our universe, with its seemingly vast quantity of information, is something like a book in the Library of Babel. We would then be denizens of nothing, occupying a place within a total reality which altogether amounts to zero information.

Such a reality — one of zero information — is the simplest state of existence. It's simpler than an empty vacuum or a geometrical point, as these both need a non-zero amount of information to describe.

### Necessary Existence

We've attempted but frustratingly failed to define a true nothing.

When we tried to specify a nothing, whether as a vacuum, a point, or an empty set, we inevitably invoke properties, abstract entities, the number zero and the infinitude of numbers and their relationships.

Furthermore, this specification is not an absolute nothing as it requires reality to have a nonzero amount of information to specify it.

Alternatively, if we attempt a nothing of zero information and zero specification we get a total reality containing all possibility. Neither approach succeeds in bringing about absolute nothingness.

Moreover, these approaches rely upon and assume the validity of logical principles and consistency. No reality, not even a nothing, appears possible without laws and principles of logic.

And so the goal of the philosopher's nothing, the "*neither structure, nor law, nor plan*" kind of true nothing at all, seems an impossible dream.

The *nothings* we attempt break down and lead to *somethings*.

- With **no structure**, there are *zero structures*, this introduces zero and with it the structure of all numbers and their interrelations.
- With **no law**, there are *no restrictions* on what can or cannot exist nor any law to prevent things spontaneously popping into existence.
- With **no plan**, there is *no information*, which is equivalent to a totality.

Inspired by his discovery of binary numbers, Leibniz wrote to the Duke of Brunswick in 1679 suggesting a design for a coin. He titled it "*Imago Creationis*" (The Image of Creation).

The motto reads:

> "Omnibus ex nihil ducendis sufficit unum"
> *For producing everything out of nothing, one principal is enough.*
>
> *— Gottfried Wilhelm Leibniz in "letter to Duke" (1679)*

If a true and absolute nothing is impossible or unstable, does this mean there must be self-creating or self-existent things? Can a thing exist out of logical necessity, because its absence is impossible?

What might the nature of such things be?

### A Self-Existent Thing?

If something did not emerge out of nothing, then there's only one other possibility: that there is something that has always existed.

In other words, nothingness is not the default state of reality.

> It is extraordinary that there should exist anything at all. Surely the most natural state of affairs is simply nothing: no universe, no God, nothing. But there is something.
>
> *— Richard Swinburne in "Is There a God?" (1996)*

Given that something exists, it either came from nothing or else something has existed from the beginning. The existence of this thing is somehow necessary. It existed without any preceding cause.

This, we also find contrary to intuition. It's strange because everything we are familiar with can trace its existence to some earlier cause:

Manufactured things are made by people, or by machines that were made by people. Life comes from other life. Things not created by humans or other life, like rivers and mountains are created by natural forces acting on matter. It seems to defy reason for a thing to exist without a cause. And yet, we know the universe exists.

The universe either came from some preceding cause, or else the universe has always existed, is self-existent, or self-creating.

There is no third option. If the universe is not the end of this causal chain, then something else is. Therefore we must accept some things are self-creating (come out of nothing) or are self-existent.

Let’s call such a thing *causeless*.

### Existing without Cause

Take anything that exists: the chair you’re sitting in, your conscious thoughts, the Eiffel tower. For the purposes of the reasoning, it doesn’t matter what thing we start with.

Given that this thing exists, there are two possibilities: either that thing was caused or it was not caused. If a thing has no cause, then it is causeless. Otherwise, the thing has a cause and its existence is owed to some other thing. If we follow the chain of causality back towards an ultimate root cause, there are three possibilities:

1. **First Cause**: The chain of causality comes to an end in a *‘first cause*‘
2. **Infinite Regression**: The chain of causality continues forever
3. **Causal Loop**: The chain of causality forms a closed cycle, or a loop

These represent all possibilities. The trace either ends (a first cause) or it continues forever. If it continues forever it forms an infinite chain that’s either open (an infinite regression) or closed (a causal loop).

In all three cases we find something that has always existed: either the first cause, the infinite chain itself, or the causal loop itself. This thing, which has always existed, we can describe as causeless.

### First Cause

If when tracing back through the series of causes we happen upon something causeless, then our existence results from a *first cause*.

According to some models, the Big Bang may represent a first cause.

Leading cosmological theories, such as the big bang and cosmic inflation posit that the universe is not infinitely old, but rather underwent an abrupt event where it came into existence.

That our universe has a point that may be marked as a beginning leaves open the possibility that there is a preceding cause for our universe. Another possibility is that the universe is its own cause, emerging as a random *quantum fluctuation* allowed by laws of physics.

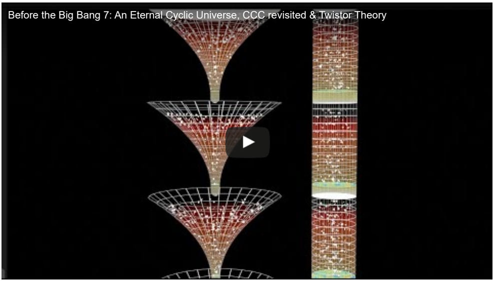
Michelangelo's "*The Creation of Adam*" (1512)

Many religions speak of the first cause as a divine act of creation. In such a case God would be the first cause. Yet some other non-theistic object could as well be responsible for our existence.

If the universe is not eternal, we should look for some reason for the sudden appearance of the universe: to explain how it could arise by itself, be self-existent, or be the product of some prior cause.

### Infinite Regression

If our universe has an eternal history, or if it belongs to a reality having an eternal history, then we exist due to an *infinite regression*.


Before the Big Bang 7: An Eternal Cyclic Universe, CCC revisited & Twistor Theory

According to conformal cyclic cosmology, the big bang is one among an infinite succession.

A number of scientific theories propose that our universe is eternal.

Prior to wide acceptance of the big bang, the *steady-state model* was popular. It proposed that the universe is eternally expanding with new matter perpetually created to fill the void in the newly made space.

Since the acceptance of the big bang, various new models suppose that the big bang is itself part of an eternal succession of big bangs.

Roger Penrose's *conformal cyclic cosmology* supposes that the *heat death* of our universe could appear as a new big bang in the next 'aeon'.

Lee Smolin proposed *cosmological natural selection* wherein a new universe spawns every time a *black hole* forms. Accordingly, if the laws mutate, he suggests that universes might even 'evolve' towards having laws that maximize the production of black holes.

Sean Carroll notes that the equations of *quantum mechanics*, unlike those of *general relativity*, permit physicists to calculate eternally into the past or future. With a theory of *quantum gravity*, we could in principle predict backwards to times preceding the big bang.

> The Schrödinger equation has an immediate, profound consequence: almost all quantum states evolve eternally toward both the past and the future. Unlike classical models such as spacetime in general relativity, which can hit singularities beyond which evolution cannot be extended, quantum evolution is very simple. [...] If this setup describes the real world, there is no beginning nor end to time.
>
> *— Sean Carroll in "Why Is There Something, Rather Than Nothing?" (2018)*

According to ancient legends, the world rests on the back of a *Cosmic Turtle*. When asked what the Cosmic Turtle rests on, a common response is, “It is turtles all the way down” — an infinite regression.

If an infinite regression is true, there is no ultimate cause. However, we might still look for an ultimate explanation for the chain of causes.

### Causal Loop

It might be that our existence is part of an infinite series, but one that repeats forever. If true, we are stuck in a never ending *causal loop*.

The hypothesized Big Bounce is an example of a cyclic cosmology.

In 1922, Alexander Friedmann applied Einstein’s equations of general relativity to the universe as a whole. He found that for certain values of the density of the universe and the *cosmological constant*, the universe will expand for a period of time, slow down, and eventually recollapse.

In his 1923 book, *The World as Space and Time*, Friedmann speculates that the collapse (or *Big Crunch*) could rebound (in a *Big Bounce*), causing a new Big Bang. The process could repeat forever.

The idea of a cyclic cosmology has appealed to many scientists, including Georges Lemaître, Richard Tolman, George Gamow, William Bonnor, Herman Zanstra and Robert Dicke, among others.

> We can now ask ourselves two important questions: why was our universe in such a highly compressed state, and why did it start expanding? The simplest and mathematically most consistent, way of answering these questions would be to say that the Big Squeeze which took place in the early history of our universe was the result of a collapse which took place at a still earlier era, and that the present expansion is simply an "elastic" rebound which started as soon as the maximum permissible squeezing density was reached.
>
> *— George Gamow in "The Creation of the Universe" (1952)*

Cyclical cosmologies can be found in many religions. For example, there is the concept of the *Wheel of Time* in the Dharmic religions.

The Nataraja depicts cycles of creation and destruction. Image Credit: Wikipedia

> The most elegant and sublime of these is a representation of the creation of the universe at the beginning of each cosmic cycle, a motif known as the cosmic dance of Shiva.
>
> The god, called in this manifestation Nataraja, the Dance King, has four hands. In the upper right hand is a drum whose sound is the sound of creation. In the upper left hand is a tongue of flame, a reminder that the universe, now newly created, will billions of years from now be utterly destroyed.
>
> *— Carl Sagan in "Cosmos" (1980)*

But cyclic models, lacking observational evidence and theoretical support, remained on the periphery of cosmology.

In 1998, observations revealed the expansion of the universe was not slowing, but accelerating. This seems to rule out a future collapse.

The driver of this acceleration, *dark energy*, remains little understood. If it is constant, the expansion will continue forever. But in some theories, it varies with time and so a later collapse may be possible.

Cyclic models have seen a revival. In 2001, Justin Khoury, Burt Ovrut, Paul Steinhard and Neil Turok proposed the ekpyrotic universe.

This idea marries string theory and cosmology to give a model where periodic *brane collisions* trigger cycles of Big Bangs and Big Crunches.

If our universe is part of a causal loop, no beginning or end is identifiable. But what got it started? Did one of the succession of states spring forth out of nothing, or might the loop have always existed?

## The Nature of Uncaused Things

Given that reality exists, we know there must be an entity that is causeless. What is it about causeless entities that makes them existent?

If a first cause, how did it bring itself into existence? If an infinite regression or causal loop, how did it come into being?

Might it exist out of logical necessity? Or is it a result of chance? Or might it exist simply because it can exist, and nothing forbids it?

Tracing causes backwards can tell us where the previous state came from, but it won't answer where the chain or loop itself came from.

> Some believe that, if all events were caused by earlier events, everything would be explained. That, however, is not so. Even an infinite series of events cannot explain itself. We could ask why this series occurred, rather than some other series, or no series.
>
> *— Derek Parfit in "Why Anything? Why This?" (2008)*

What we are looking for is not a cause, but a reason — an explanation.

For in the cases of the loops or infinite regression, we can always find an earlier cause, but may never reach a satisfactory reason.

> For the question to be properly, fully answered, we need *a sufficient reason that has no need of any further reason*—a ‘Because’ that doesn’t throw up a further ‘Why?’—and this must lie outside the series of contingent things, and must be found in a substance which is the cause of the *entire* series. It must be something that exists necessarily, carrying the reason for its existence within itself; only that can give us a sufficient reason at which we can stop, having no further Why?-question taking us from this being to something else.
>
> *— Gottfried Wilhelm Leibniz* in *“The Principles of Nature and Grace, Based on Reason”* *(1714)*

If we seek a final ‘*Because*’ that puts an end to any further ‘*Whys*’, we must find something that we can show *must* exist. Not only must this thing exist, but we must also show how this thing can account for the reality we experience — only then will we have succeeded in our quest.

## Candidates for Self-Existence

Throughout history, philosophers, scientists and religions have suggested candidates for self-existence.

These causeless entities generally fall into one of seven categories:

1. Logic
2. Truth
3. Numbers
4. Possibility
5. The Universe
6. A Higher Plane
7. Consciousness

Let’s review each candidate and its merits for self-existence. Afterwards, we will consider whether that entity could further serve as an *ultimate explanation*: a self-existent starting point from which the rest of reality emerges as a direct consequence of that thing.

### Logic

Some suppose rational principles, like the *laws of logic*, are self-existent. Unlike physical laws, logical laws have an air of inevitability to them.

These are laws such as:

- The *law of identity* (things are identical to themselves, e.g. A = A)
- The *law of the excluded middle* (statements are either *true* or *not true*)
- The *law of noncontradiction* (no statement is both *true* and *false*).

These are laws that seem inevitable, and necessary in any reality, as it's hard to imagine any reality where logical laws would not hold.

If logical laws apply in all universes and all possible realities, they represent universal laws, applying everywhere and to everything.

If we can say laws of physics exist because all matter in our universe adheres to physical laws, then could we say laws of logic exist, because all things in all possible realities adhere to these logical laws?

If so, then laws of logic are self-existent. They are necessary even in a reality of no things, as logical laws ensure "nothing = nothing".

> If I ask myself why bodies or minds exist rather than nothing, I find no answer; but that a logical principle, such as A = A, should have the power of creating itself, triumphing over the nought throughout eternity, seems to be natural.
>
> *— Henri Bergson in "Creative Evolution" (1907)*

This idea, that logical law and rational principles have eternally existed predates modern philosophers. It's a cornerstone belief in Taoism.

> There was something formless and perfect before the universe was born. It is serene. Empty. Solitary. Unchanging. Infinite. Eternally present. It is the mother of the universe.
>
> For lack of a better name, I call it the Tao.
>
> *— Laozi in chapter 25 of "Tao Te Ching" (c. 600 B.C.)*

Tao translates as "the way", "principles", and "natural order". A similar sentiment is expressed in Christianity. The Gospel of John begins:

> In the beginning was the Word, and the Word was with God, and the Word was God.
>
> *— Gospel of John, chapter 1 verse 1 (100 A.D.)*

The term *Word* is a translation of *verbum* in Latin, which is a translation of *logos* (λόγος) in Greek. Logos has a deep and rich meaning. Aside from "word" logos also means, "reason", "principles", and "rational law".

Logos is the root from which we get the word *logic*. It is also the origin of the suffix *-logy* (as in biology, geology and psychology). Where it means the principles, explanation, and story thereof.

> If however he be admitted to exist apart from Matter in virtue of his character as a principle and a rational law [logos], God will be bodiless, the Creative Power bodiless.
>
> — Plotinus in "The Enneads VI.1.26" (270 A.D.)

In Chinese bibles, *Logos* has been translated as *Tao*. In this way, Both Taoist and Christian ideas suppose that the Tao/Logos (order, reason, principles, logic, rational law) exists prior to the material universe.

### Truth

Some believe that truth is causeless.

There seems to be some essential difference between "zero is even" and "zero is odd" — only one of them is *true*. Did anything make it so?

When did this statement become true? Did it require a human mind to conceive of it as being true, or has it always been true? Might this property of truth have an independent and necessary existence?

If logical laws apply universally, then any well-formed statement is either true or false. The *law of noncontradiction* says a statement can't be both true and false. The *law of excluded middle* says a statement must be either true or false — there is no middle ground.

Thus, if logical laws apply to everything, they apply to all statements, forcing on them the objective property of being either 'true' or 'false'. As Derek Parfit said, "Some truth is logically necessary when its denial leads to a contradiction."

Accordingly, the truth that "zero is even" would exist before humans proved it. It would be true before it was first spoken. Presumably, it would be true absent a universe of things, for even in the case zero things exist, it remains true that "an even number of things exist."

> When we imagine how things would have been if nothing had ever existed, what we should imagine away are such things as living beings, stars and atoms. There would still have been various truths, such as the truth that there were no stars or atoms, or that 9 is divisible by 3. We can ask why these things would have been true. And such questions may have answers. Thus we can explain why, even if nothing had ever existed, 9 would still have been divisible by 3. There is no conceivable alternative.
>
> *— Derek Parfit in "Why Anything? Why This?" (2008)*

Ultimately, nothing is responsible for creating this truth. Truth exists out of its own necessity. It has always existed and could never *not exist*.

The idea of the primacy of truth is very old. It can be found in many religions, some of which draw an equivalence between God and Truth.

In the 3,000 year old religion of *Zoroastrianism*, it is said that *Asha* (meaning truth and order) is the divine law behind all things.

> Iran, as India, presents us with a term which has had to signify first of all 'true statement'; that this statement, because it was true, had to correspond to an objective, material reality; and that, as the discourse did, this reality must embrace all things; and, finally that one recognized in it a great cosmic principle since all things happen according to it.
>
> *— Jacques Duchesne-Guillemin in "Heraclitus and Iran" (1963)*

In the book of Psalms 31:5, God is called the "God of truth." In the Qur'an, Al-Ḥaqq (meaning *The Truth*), is one of the *99 Names of God*.

Similar ideas are found in Dharmic religions.

The *Mūl Mantar* (or root mantra), is the most important verse of the Sikh religion. It begins: "There is one creator, whose name is truth" and is described as timeless, beyond birth or death, and self-existent.

In the *Brahma Saṁhitā*, a Hindu prayer book, the primeval Lord *Govinda* is described as the "indivisible, infinite, limitless, truth."

> If it is possible for the human tongue to give the fullest description of God, I have come to the conclusion that God is Truth.
>
> *— Mahatma Gandhi in "All Men Are Brothers" (1953)*

### Numbers

Some speculate that numbers, or their relationships, are self-existent.

If truth has an independent existence, this truth includes the infinite truths describing all true relationships between the numbers.

These include arithmetical statements, such as:

- 2 is even
- 7 is prime
- 1 is greater than 0
- 2 + 2 = 4
- n × 0 = 0
- the square root of 9 = 3

Truths concerning the numbers are boundless.

Might this infinite truth, provide a scaffolding and structure to all the numbers? And if there is nothing more to numbers than their properties and relations, then might numbers — in some sense — *really exist*?

It's been said, "math is the science we could still do if we woke up tomorrow and there was no universe." The idea that math holds some claim to reality is known as *mathematical realism*, or *Platonism*. It's believed by many, if not most, mathematicians.

> It is an idea that many mathematicians are comfortable with. In this scheme, the truths that mathematicians seek are, in a clear sense, already "there", and mathematical research can be compared with archaeology; the mathematicians' job is to seek out these truths as a task of discovery rather than one of invention.
>
> *— Roger Penrose in "The Big Questions: What is reality?" (2006)*

But can number relations have any reality in the absence of things?

If *zero* things exist, it would have to be true that "0 not equal 1", and also that "0 not equal 2", and true that zero not equal any other number.

So even with no *things*, an infinite number of arithmetical relations are needed to avoid contradiction and preserve a nothing of zero things.

> If all *things* were absent, would Two And Two Make Four be a *non-reality*, remaining like that until at least four things had come to exist? Presumably the answer must be No.
>
> *— John A. Leslie and Robert Lawrence Kuhn in "The Mystery of Existence" (2013)*

This idea that numbers have an independent existence is ancient. It can be traced to some of the earliest records of human thought. It was taught by ancient philosophers and is found in the oldest religious texts.

Taoism, for instance, sets the existence of numbers as prior to *things*.

> The Tao gives birth to One.
> One gives birth to Two.
> Two gives birth to Three.
> Three gives birth to all things.
>
> *— Laozi in chapter 42 of "Tao Te Ching" (c. 600 B.C.)*

The Greek mathematician Pythagoras taught "*All things are number.*"

> Pythagoreans applied themselves to mathematics, and were the first to develop this science; and through studying it they came to believe that its principles are the principles of everything.
>
> *— Aristotle in "Metaphysics 1.985b" (c. 350 BC)*

Pythagoras was the first to propose that the motions of the planets are governed by mathematical equations, which he called the *harmony of the spheres*. When Newton discovered his *law of universal gravitation* some 2,000 years later, he credited Pythagoras for the discovery.

Across times, mathematicians have described a seemingly divine connection between mathematics and reality:

> Geometry, which before the origin of things was coeternal with the divine mind and is God himself (for what could there be in God which would not be God himself?), supplied God with patterns for the creation of the world, and passed over to Man along with the image of God.
>
> *— Johannes Kepler in "The Harmony of the World" (1619)*

> From these considerations it is now wonderfully evident how a certain divine mathematics or metaphysical mechanics is employed in the very origination of things.
>
> *— Gottfried Wilhelm Leibniz in "On the Ultimate Origination of Things" (1697)*

> To all of us who hold the Christian belief that God is truth, anything that is true is a fact about God, and mathematics is a branch of theology. […]
>
> An old Greek, a French child, and a self-taught Indian, each finds for himself the same theory of geometrical conics. The simplest and therefore the most scientific way of describing this, is that they have discovered, not created, a geometry that exists by itself eternally, the same for all, the same for teacher as for taught, the same for man as for God. The truth that is the same for man as for God is pure mathematics.
>
> *— Hilda P. Hudson in "Mathematics and Eternity" (1925)*

**Possibility**

Some speculate that simply *not being impossible*, is sufficient for being actual. If true, then every possible object, structure, and entity exists.

What then is impossible?

At a minimum, we can say self-contradictory things. For example: square circles, married bachelors, triangles with five sides, and so on. We might also include things proven to not exist: odd numbers evenly divisible by two, a largest prime number, a sixth platonic solid.

If consistency and provability are the requirements for possibility, then *possible existence* is *mathematical existence*. As David Hilbert said, "Mathematical existence is merely freedom from contradiction."

The idea that all possible things exist has enjoyed many names:

In 1936, Arthur Lovejoy dubbed it the *principle of plenitude*. In 1981, Robert Nozick named it the *principle of fecundity*. David Lewis, in 1986, developed it as a theory he called *modal realism*. In Max Tegmark's 1998 model of multiverses, he called it the *mathematical universe hypothesis*. Most recently, in 2008, Derek Parfit coined the *all worlds hypothesis*.

If all possible objects are actual, then our universe is just one such possible structure among an infinite, and total, set of all possible structures.

Anything that could happen, happens somewhere.

> There are so many other worlds, in fact, that absolutely *every* way that a world could possibly be is a way that some world *is*. And as with worlds, so it is with parts of worlds. There are ever so many ways that a part of a world could be; and so many and so varied are the other worlds that absolutely every way that a part of a world could possibly be is a way that some part of some world is.
>
> *— David Lewis* in *"On the Plurality of Worlds" (1986)*

> If the universe is inherently mathematical, then why was only one of the many mathematical structures singled out to describe a universe? A fundamental asymmetry appears to be built into the heart of reality.
>
> As a way out of this conundrum, I have suggested that complete mathematical symmetry holds: that all mathematical structures exist physically as well. Every mathematical structure corresponds to a parallel universe.
>
> *— Max Tegmark* in *"Parallel Universes" (2003)*

The idea that possibility is sufficient for actuality is not new.

Arthur Lovejoy, who wrote about the history of this idea, traced it to 360 B.C. beginning with Plato's *theory of forms*. Plato hypothesized a realm containing all possible *forms* (eternal, perfect, idealizations).

We find this idea expressed in a variety of ways throughout history.

> The One is all things and not a single one of them. [...] It is because there is nothing in it that all things come from it: in order that being may exist, the One is not being, but the generator of being.
>
> *— Plotinus* in *"The Enneads V.2.1" (270 A.D.)*

> But to explain more distinctly how from eternal or essential metaphysical truths there arise temporal, contingent or physical truths, we must first observe that, from the very fact that there exists something rather than nothing, it follows that in possible things, or in possibility or essence itself, there is a certain need of existence, or so to speak, a claim to exist, in a word, that essence of itself tends to existence.
>
> *— Gottfried Wilhelm Leibniz* in *"On the Ultimate Origination of Things" (1697)*

Others have linked God's infinite nature to an infinite creation.

> From God’s supreme power, or infinite nature, an infinite number of things—that is, all things have necessarily flowed forth in an infinite number of ways, or always flow from the same necessity; in the same way as from the nature of a triangle it follows from eternity and for eternity, that its three interior angles are equal to two right angles.
>
> *— Baruch Spinoza in “Ethics” (1677)*

> Know thou of a truth that the worlds of God are countless in their number, and infinite in their range. None can reckon or comprehend them except God, the All-Knowing, the All-Wise.
>
> *— Bahá’u’lláh in “Tablet to Vafá” (circa 1885)*

> It makes sense that an infinitely creative deity would create other universes, not just our own. […] For the theist, the existence of multiple universes would simply support the view that creation reflects the *infinite creativity* of the creator.
>
> *— Robin A. Collins in “Spiritual Information” (2005)*

### The Universe

Some say that the universe, or the physical law that enabled it to come into existence, has always existed and so is self-existent.

The reasoning is simple. If we know at least one thing is causeless, why not just presume this causeless thing is the universe itself?

> I should say that the universe is just there, and that’s all.
>
> *— Bertrand Russell in “Russell-Copleston debate” (1948)*

Perhaps there is no reason. It simply *is*, and has no explanation.

Given the universe exists, we know the universe is possible. Perhaps it exists *because* it is possible, and nothing forbade it from existing.

But there are other tracks to follow. Perhaps we can demonstrate that the universe is self-creating. Or that it exists due to some higher law.

Modern cosmology made progress along these directions.

The theory of *cosmic inflation* uses *general relativity* to explain how a tiny *quantum fluctuation* can inflate into the huge universe we now see.

> Inflation is radically at odds with the old dictum of Democritus and Lucretius, "Nothing can be created from nothing." If inflation is right, *everything* can be created from nothing, or at least from very little. If inflation is right, the universe can properly be called the ultimate free lunch.
>
> *— Alan Guth in "Inflation and the New Era of High-Precision Cosmology" (2002)*

According to the laws of *quantum mechanics*, the quantum fluctuation that seeded our universe appeared because it was possible, emerging out of nothing but the physical laws themselves.

> Is there any bound to how small the initial universe could be? […] To my surprise, I found that the tunneling probability did not vanish as the initial size approached zero. I also noticed that my calculations were greatly simplified when I allowed the initial radius of the universe to vanish. This was really crazy: what I had was a mathematical description of a universe tunneling from a zero size — from nothing! […]
>
> And yet, the state of "nothing" cannot be identified with *absolute* nothingness. The tunneling is described by the laws of quantum mechanics, and thus "nothing" should be subjected to these laws. The laws of physics must have existed, even though there was no universe.
>
> *— Alexander Vilenkin in "Many Worlds in One" (2006)*

General relativity and quantum mechanics are the two cornerstone theories of modern physics. From them alone we can explain a self-emerging universe. Quantum mechanics shows how possible fluctuations spontaneously pop into existence. General relativity explains how such a fluctuation could expand exponentially to reach an unfathomable size. (See: "*What caused the big bang?*")

But we must wonder, why these laws? What, if anything, is special about them? Who or what anointed these equations with existence?

> What is it that breathes fire into the equations and makes a universe for them to describe? The usual approach of science of constructing a mathematical model cannot answer the questions of why there should be a universe for the model to describe. Why does the universe go to all the bother of existing?
>
> — *Stephen Hawking* in *"A Brief History of Time"* (1988)

The idea that the universe is uncreated, or exists due to some laws, predates the successes of modern physics and cosmology.

The ancient Greeks and Romans believed that the material of the universe has always existed, since nothing comes from nothing.

> The first principle is that nothing can be created from the non-existent: for otherwise anything would be formed from anything without the need of seed.
>
> — *Epicurus* in *"Letter to Herodotus"* (c. 300 B.C.)

This matter was originally in a state of disorder (or *kháos*).

> Before the ocean and the earth appeared — before the skies had overspread them all — the face of Nature in a vast expanse was naught but Chaos uniformly waste.
>
> — *Ovid* in *"Metamorphoses"* (8 A.D.)

It was not until a divine craftsman imposed mathematical order on this chaos that the ordered universe — the *kosmos* — appeared.

In religions with past-eternal cosmologies, the universe is believed to be causeless. Jainism explicitly says the universe was not created.

> The doctrine that the world was created is ill advised and should be rejected. If God created the world, where was he before the creation? If you say he was transcendent then and needed no support, where is he now? How could God have made this world without any raw material? If you say that he made this first, and then the world, you are faced with an endless regression. If you declare that this raw material arose naturally you fall into another fallacy, For the whole universe might thus have been its own creator, and have arisen quite naturally.
>
> — *Jinasena* in *"Mahapurana"* (898 A.D.)

### A Higher Plane

Some suppose our universe exists on account of a higher plane and that this higher plane, rather than the universe, is self-existent.

There are many conceptions of what this higher plane of reality is.

Some describe this plane as a *cause of being*, be it God, a creator, divine will, a first cause, or an unmoved mover. Others describe it as a *source of being*, the Mind of God, *The One*, or the *Tao*. Still others describe it as a *ground of being*, *The Absolute*, *The All*, or what Hindus call *Brahman*.

Not all theories of higher planes of existence need be supernatural. There are also naturalistic descriptions of higher realities.

In *multiverse theories*, a higher reality contains our universe among others. In *brane cosmology*, our universe is caused by collisions in a literal 'higher dimension'. In the *simulation hypothesis*, our universe is the result of computations occurring in a more fundamental reality. (See: "*Are we living in a computer simulation?*")

Though these theories deal with phenomena that are beyond the nature of our universe, and hence *supernatural*, evidence is accumulating for some of these higher realms.

> Every experiment that brings better credence to inflationary theory brings us much closer to hints that the multiverse is real.
>
> *— Andrei Linde in interview (2014)*

> Various theories imply that various types of parallel universes exist, so that by modus ponens, if we take any of these theories seriously, we're forced to take seriously also some parallel universes. […] Parallel universes aren't a theory, but predictions of certain theories.
>
> *— Max Tegmark in "Are Parallel Universes Unscientific Nonsense?" (2014)*

The idea of a preexistent cause, source, or ground of being, one that's external to and beyond our universe, is as old as religion itself.

> By means of the Higher Knowledge the wise behold everywhere Brahman, which otherwise cannot be seen or seized, which has no root or attributes, no eyes or ears, no hands or feet; which is eternal and omnipresent, all-pervading and extremely subtle; which is imperishable and the source of all beings.
>
> *— Mundaka Upanishad I.6 (c. 800 B.C.)*

> In the beginning God created the heavens and the earth.
>
> *— Genesis 1:1 (c. 600 B.C.)*

### Consciousness

Some posit that consciousness is self-existent. If true, consciousness could be the cause of a universe that exists only in appearance.

The idea seems strange, but we must admit all knowledge of existence comes to us through experiences that exist in our conscious minds.

This fact hasn't escaped the attention of scientists.

> It is difficult for the matter-of-fact physicist to accept the view that the substratum of everything is of mental character. But no one can deny that mind is the first and most direct thing in our experience, and all else is remote inference.
>
> *— Arthur Eddington in "The Nature of the Physical World" (1927)*

> I regard consciousness as fundamental. I regard matter as derivative from consciousness. We cannot get behind consciousness. Everything that we talk about, everything that we regard as existing, postulates consciousness.
>
> *— Max Planck in "Interviews with Great Scientists" (1931)*

The relation between mind and matter perplexes scientists to this day.

It leads to philosophical conundrums like brains in a vat, Boltzmann brains, and the simulation argument. All of which suppose that perceived reality is an illusion — a byproduct of a deluded mind.

It's also led physicists to propose theories where conscious minds play a fundamental role in shaping reality as we see it. Physics, after all, is fundamentally about experiences. Physics is the science of predicting *future observations* from *prior observations*.

In 1970, Heinz-Dieter Zeh proposed the many-minds interpretation of quantum mechanics, which proposes that differentiation of an infinity of observer mind states explains quantum phenomena.

> A many minds theory, like a many worlds theory, supposes that, associated with a sentient being at any given time, there is a multiplicity of distinct conscious points of view. But a many minds theory holds that it is these conscious points of view or 'minds,' rather than 'worlds', that are to be conceived as literally dividing or differentiating over time.
>
> *— Michael Lockwood in "'Many Minds'. Interpretations of Quantum Mechanics" (1995)*

The mysterious link between consciousness and reality inspired John Wheeler's idea of a *participatory universe*. As Martin Redfern described, "Many don't agree with John Wheeler, but if he's right then we and presumably other conscious observers throughout the universe, are the creators — or at least the minds that make the universe manifest."

The idea that consciousness precedes the material world has a rich history. It is found across philosophies and religious traditions. Where physical reality is seen as a dream or construct of a mind or soul.

> For it is the same thing that can be thought and that can be.
>
> *— Parmenides in "fragment 3" (c. 475 B.C.)*

A few millennia later, the philosopher George Berkeley echoed Parmenides, concluding that "to be is to be perceived."

> It is indeed widely believed that all perceptible objects — houses, mountains, rivers, and so on — really exist independently of being perceived by the understanding. But however widely and confidently this belief may be held, anyone who has the courage to challenge it will — if I'm not mistaken — see that it involves an obvious contradiction. For what are houses, mountains, rivers etc. but things we perceive by sense?
>
> *— George Berkeley in "The Principles of Human Knowledge" (1710)*

Hindus believe the universal mind, or world soul *Atman*, became the universe. Accordingly, the universe is not real, but the *dream of a God* under the spell of *māyā* — a temporary ignorance of the true reality.

Buddhists believe that the mind underlies and forms everything.

> All the phenomena of existence have mind as their precursor, mind as their supreme leader, and of mind are they made.
>
> *— Gautama Buddha in "The Dhammapada" (c. 500 B.C.)*

The Taoist philosopher Zhuang Zhou said the world is a dream.

> While he is dreaming he does not know it is a dream, and in his dream he may even try to interpret a dream. Only after he wakes does he know it was a dream. And someday there will be a great awakening when we know that this is all a great dream.
>
> *— Zhuang Zhou in "Zhuangzi" (c. 300 B.C.)*

### Reviewing Answers

We've considered seven proposals for self-existent things:

1. Logic
2. Truth
3. Numbers
4. Possibility
5. The Universe
6. A Higher Plane
7. Consciousness

Yet so far, none of these is satisfactory as an ultimate explanation. None stands out as a final *Because* that doesn't throw up a further *Why*.

#### Abstract Entities: Logic, Truth, Numbers

First, we have abstract entities: *logic*, *truth*, and *numbers*. But though these things are plausibly causeless, how could they cause anything?

These things are eternal and unchanging, not to mention abstract. How can they cause anything like the huge dynamic universe we see?

> So the cause of the universe must (at least causally prior to the universe's existence) transcend space and time and therefore cannot be physical or material. But there are only two kinds of things that could fall under such a description: either an abstract object (like a number) or else a mind (a soul, a self). But abstract objects don't stand in causal relations. This is part of what it means to be abstract. The number 7, for example, doesn't cause anything.
>
> *— William Lane Craig in "Reasonable Faith" (1994)*

#### Possibility: Mathematical Consistency

What about all possibility? If all possible things exist, then our universe would be counted among those possible things.

But why should possible things be actual? As J. J. C. Smart remarked, “That anything should exist at all does seem to me a matter for the deepest awe.” Existence is what we seek to explain.

And there is another issue: why is our universe so simple and ordered compared to all else that exists in the space of all possibility?

> Tegmark’s proposal, however, faces a formidable problem. The number of mathematical structures increases with increasing complexity, suggesting that “typical” structures should be horrendously large and cumbersome. This seems to be in conflict with the simplicity and beauty of the theories describing our world.
>
> *— Alexander Vilenkin in “Many Worlds in One” (2006)*

### The Physical: The Universe, Physical Law

If the universe alone exists, it explains exactly what we see.

But there would be lingering questions. Why does consciousness exist? Are abstract entities real? And perhaps the biggest mystery of all: “Why should this universe, or its laws, be the only real ones?

As Lee Smolin asked, “Why do these laws, and not others, hold in our universe?” Does the existence of laws require some higher principle?

> Although science may solve the problem of how the universe began, it can not answer the question: Why does the universe bother to exist? Maybe only God can answer that.
>
> *— Stephen Hawking in interview (1988)*

### Higher Planes: God, Multiverse, Simulation

We might appeal to a higher cause to explain the universe we see.

But as J. J. C. Smart reminds us, “If we postulate God in addition to the created universe we increase the complexity of our hypothesis. We have all the complexity of the universe itself, and we have in addition the at least equal complexity of God.”

This seems true for any higher principle.

For example, if we presume our universe is the result of a simulation in a higher reality, what’s responsible for that higher reality?

> Whatever our final theory of physics, we will be left facing an irreducible mystery. For perhaps there could have been nothing at all. Not even empty space, but just absolutely nothing […] If you believe God is the creator, well, why is God that way? The religious person is left with a mystery which is no less than the mystery with which science leaves us.
>
> *— Steven Weinberg in "Closer to Truth: Cosmos, Consciousness, God" (2008, 2009)*

**The Mental: Mind, Soul, Consciousness**

If consciousness is causeless, it could explain why perceptions exist.

But if reality is only a dream or illusion, why do our perceptions appear to follow along with a universe adhering to physical laws?

If it's all an illusion, what's the source of this illusion?

> Even if everything in this *universe* were an illusion, there would still have to be something outside this universe that generates the illusion.
>
> *— John A. Leslie and Robert Lawrence Kuhn in "The Mystery of Existence" (2013)*

## A Causeless Cause

What we seek, and have so far have failed to identify, is a *causeless cause*.

This is, something that not only has a plausibly self-existent and causeless nature, but also plausibly accounts for the reality we see.

We've found things that appear to be *causeless*: logic, truth, and numbers — but these things also appear incapable of being a *cause*.

Conversely, we've found things that could be a *cause*: the universe, a higher plane, and consciousness — but they don't seem *causeless*.

Then there is possibility, for which we have reason to question whether it is causeless and whether it causes what we see.

| | Causeless | Cause |
|---|---|---|
| **Logic** | Plausible | Doubtful |
| **Truth** | Plausible | Doubtful |
| **Numbers** | Plausible | Doubtful |
| **Possibility** | Questionable | Questionable |
| **The Universe** | Doubtful | Plausible |
| **A Higher Plane** | Doubtful | Plausible |

| | | |
|---|---|---|
| **Consciousness** | Doubtful | Plausible |

We find an almost inverse relation: The more plausibly something is *causeless*, the less plausible it seems to be the *cause* for what we see.

A *causeless cause* would provide us with a complete explanation.

It would explain both itself and the properties of observed reality. It would describe the relation between the mental and material. It would tell us why the universe exists and why it has simple, ordered laws.

To progress we need to find the connecting glue — the missing piece of the puzzle that shows either how a causeless thing accounts for the reality we see, or alternatively, why the reality we see is causeless.

## Three Modes of Existence

In reviewing the seven categories of possibly causeless things, we encountered three *modes* of existence. Loosely speaking they are:

- Mathematical Existence
- Material Existence
- Mental Existence

**Mathematical existence** includes: abstract entities, logic, truth, numbers, math, properties, forms, equations, relations, possibility, structures, laws, and principles. This mode might include religious concepts of divine law/will/order (Tao/Logos), the infinite indivisible truth (Asha/Govinda), and divine mathematics.

**Material existence** includes: matter, energy, the vacuum, spacetime, physical law, the universe, the multiverse, particles, forces, fields, and physical systems. This mode might include what religions refer to as creation, kosmos, the material plane, and māyā/illusion.

**Mental existence** includes: mind, consciousness, observations, perceptions, ideas, and dreams. This mode might include religious concepts of the mind of god, world soul, Atman, and souls or spirits.

What is the relation between the three modes of existence: math, matter, and mind?

> My viewpoint allows for three different kinds of reality: the physical, the mental and the Platonic-mathematical, with something (as yet) profoundly mysterious in the relations between the three.
>
> *— Roger Penrose in "The Big Questions: What is reality?" (2006)*

## Math, Matter, Mind

Of the three modes of existence, does any stand out as being more fundamental than any of the others? What is their relation?

If one of these modes of existence can be shown as primary, while the others are derivative, then we might close in on a causeless cause.

A common view of physicists is that matter produces mind, and mind produces math. But even among physicists, this view isn't universal.

> The triangle suggests the circularity of the widespread view that math arises from the mind, the mind arises out of matter, and that matter can be explained in terms of math. Non-physicists should be wary of any claim that modern physics leads us to any particular resolution of this circularity, since even the sample of three theoretical physicists writing this paper hold three divergent views.
>
> *— Piet Hut, Mark Alford, and Max Tegmark in "On Math, Matter, and Mind" (2006)*

What is the reality of these modes of existence? Are all on equal footing? Or is one more fundamental while the others are derivative?

### Materialism: Matter is Primary

Materialism is the view that *matter* is fundamental.

It assumes mental states are the byproduct of particular material arrangements (e.g. brains) and that mathematical objects, if they exist at all outside of minds, have no bearing on the material world.

Materialism is a popular, if not conventional, view among physicists.

Materialism can explain why our perceptions follow the patterns of physical law, but it has difficulty explaining why matter gives rise to mental states — this is the so-called *hard-problem of consciousness*.

Materialism also hits an explanatory dead-end trying to answer why matter exists and why it follows simple physical laws.

> If eager to know the world's structure, ask the scientists. Science, however, seems unable to answer some key questions concerning the structure. For start, why is the structure an orderly one? Why do events so often develop in fairly simple and familiar ways, leading us to talk of causal laws? […]
>
> Then there is what can seem the biggest question of all. Science investigates the world's structure, but why is there anything at all to be structured? Why is there a cosmos, not a blank? Why is there something rather than nothing? Science cannot answer this.
>
> *— John Leslie in "A Cosmos Existing through Ethical Necessity" (2009)*

### Idealism: Mind is Primary

Idealism is the view that *mind* is fundamental.

It assumes mental states are the basis of reality, and that the matter that seems to exist, exists only as thoughts and perceptions in minds.

Idealism is expressed by Eastern religions, theologians, and mystics. But increasingly, physicists recognize they can't so easily do away with the observer. It seems the observer plays a necessary, if not fundamental, role in any description of reality.

> Consciousness cannot be accounted for in physical terms. For consciousness is absolutely fundamental. It cannot be accounted for in terms of anything else.
>
> *— Erwin Schrödinger* in *interview (1931)*

But idealism doesn't answer everything. It doesn't explain why minds are bound up with the patterns of matter in a material world.

> We find that our perceptions obey some laws, which can be most conveniently formulated if we assume that there is some underlying reality beyond our perceptions. This model of a material world obeying laws of physics is so successful that soon we forget about our starting point and say that matter is the only reality, and perceptions are nothing but a useful tool for the description of matter. This assumption is almost as natural (and maybe as false) as our previous assumption that space is only a mathematical tool for the description of matter. We are substituting *reality* of our feelings by the successfully working *theory* of an independently existing material world. And the theory is so successful that we almost never think about its possible limitations.
>
> *— Andrei Linde* in *"Inflation, Quantum Cosmology, and the Anthropic Principle" (2002)*

### Platonism: Math is Primary

Platonism is the idea that *math* is fundamental.

It assumes abstract objects are the most real, and that everything we see and perceive is somehow derivative from this higher existence.

Platonism is popular among philosophers and mathematicians, whose job is to study the objective properties of abstract things.

If mathematical objects form the basis of reality, it might explain why the material world is so mathematical in its form.

> In a famous 1959 lecture, physicist Eugine P. Wigner argued that "the enormous usefulness of mathematics in the natural sciences is something bordering on the mysterious." Conversely, mathematical structures have an eerily real feel to them. They satisfy a central criterion of objective existence: they are the same no matter who studies them. A theorem is true regardless of whether it is proved by a human, a computer or an intelligent dolphin. Contemplative alien civilizations would find the same mathematical structures as we have. Accordingly mathematicians commonly say that they discover mathematical structures rather than create them.
>
> *— Max Tegmark in "Parallel Universes" (2003)*

Where Platonism falls short is in explaining how abstract objects lead to material or mental existence. According to Leibniz, the difficulty is explaining, "how from eternal or essential metaphysical truths there arise temporal, contingent or physical truths."

## What Came First?

For each of the three modes of existence, there is an ancient school of thought holding that mode of existence as most fundamental.

**The Mathematical:** Plato believed that abstract entities were the most real and that the material world was derivative.

**The Material:** Plato's foremost student Aristotle, disagreed, saying material substances were more real than abstract forms.

**The Mental:** Several centuries later, Plotinus argued that mind was more real than the material reality it perceives.

Today's scientists, mathematicians, and philosophers seem no closer to an answer on whether math, matter, or mind came first.

- Does mind give rise to math, or does math give rise to mind?
- Does matter give rise to mind, or does mind give rise to matter?
- Does math give rise to matter, or does matter give rise to math?

To unravel the mystery of existence requires that we understand the relationship between these modes of existence. Only then do we have any hope of identifying an ultimate explanation: a *causeless cause*.

> To address the nature of reality we need to understand its connection to consciousness and mathematics.
>
> *— Roger Penrose in "The Big Questions: What is reality?" (2006)*

## Are They One?

Various thinkers have suspected the three modes of existence to be connected and perhaps are all aspects of one ultimate reality.

### Mind and Matter as One?

Modern physical experiments have revealed something inseparable between the mind and the observed physical reality.

> As we penetrate into matter, nature does not show us any isolated 'basic building blocks', but rather appears as a complicated web of relations between the various parts of the whole. These relations always include the observer in an essential way. The human observer constitutes the final link in the chain of observational processes, and the properties of any atomic object can only be understood in terms of interaction with the observer. This means that the classical ideal of an objective description of nature is no longer valid. The Cartesian partition between the I and the world, between the observer and the observed, cannot be made when dealing with atomic matter. In atomic physics, we can never speak about nature without, at the same time, speaking about ourselves.
>
> *— Fritjof Capra in "The Tao of Physics" (1975)*

> Aren't we mistaken in making this separation between 'the universe' and 'life and mind'? Shouldn't we seek ways to think of them as one?
>
> *— John Archibald Wheeler quoted in "Trespassing on Einstein's Lawn" (2014)*

### Math and Matter as One?

Likewise, mathematicians and scientists cannot help but notice a mysterious link connecting mathematics and the physical world.

> There exists, unless I am mistaken, an entire world consisting of the totality of mathematical truths, which is accessible to us only through our intelligence, just as there exists the world of physical realities; each one is independent of us, both of them divinely created and appear different only because of the weakness of our mind; but, for a more powerful intelligence, they are one and the same thing, whose synthesis is partially revealed in that marvelous correspondence between abstract mathematics on the one hand and astronomy and all branches of physics on the other.
>
> *— Charles Hermite in "Eloges Académiques et Discours" (translation p. 323) (1912)*

> Maybe the relationships are all that exist. Maybe the world is *made* of math. At first that sounded nuts, but when I thought about it I had to wonder, what exactly is the other option? That the world is made of "things"? What the hell is a "thing"? It was one of those concepts that fold under the slightest interrogation. Look closely at any object and you find it's an amalgamation of particles. But look closely at the particles and you find that they are irreducible representations of the Poincaré symmetry group—whatever that meant. The point is, particles, at bottom, look a lot like math.
>
> *— Amanda Gefter in "Trespassing on Einstein's Lawn" (2014)*

### All as One?

If matter and mind are two aspects of one reality, and if math and matter are likewise two aspects of one reality, then all three must be connected — all would be reflections of one underlying reality.

> So how do the elements of the trinity fit together: the "phenomenological" world, the "physical" world, and the "mathematical" world? On the unargued assumption that the principle underlying ultimate reality is radically simple, it will here be conjectured that these three realms are one-and-the-same under different descriptions.
>
> *— David Pearce in "Why Does Anything Exist?" (1995)*

## A Path to Reality

For millennia, philosophers have debated the relation between math, matter, and mind. For millennia, they've sought a causeless cause.

Raphael's masterpiece *The School of Athens* depicts philosophers at Plato's Academy (1511)

Despite this, philosophy has not yielded any definitive answers.

Perhaps science can shed new light on this question. Science allows us to test and decide among competing theories. Science provides opportunities to discover the missing piece of the puzzle and explain how and why a causeless thing gives rise to the reality we see.

As it happens, discoveries in the field of mathematics in the 20th century found this missing puzzle piece. We now know a viable link between "*eternal or essential metaphysical truths*" and "*temporal, contingent or physical truths.*" We can explain how reality can emerge from self-existent, causeless truth concerning numbers and their relations.

But without hard science and observational evidence to back it up, how can we ever know if this explanation is right? How can we ever escape from the morass of inconclusive philosophy?

Fortunately, discoveries in the fields of physics and cosmology — also occurring in the 20th century — provide exactly this support. We not only have found a plausible path to reality, we have evidence for it.

## 20th Century Mathematics

Many consider the field of mathematics to be mostly uneventful — unchanged since Euclid defined the laws of geometry 2,300 years ago.

But at the turn of the 20th century, the field of mathematics was in a state of crisis. The field was shaken to its foundation. Math was broken, and it had to be rebuilt from scratch. During this reformation, monumental discoveries shocked and dismayed mathematicians.

In the first half of the 20th century, logicians and mathematicians discovered a provably self-existent thing. In the second half of the 20th century, they showed how — under certain assumptions — this self-existent thing could account for the reality we see.

Might this thing be our *causeless cause*?

Let's see what mathematicians found, and how they came to find it.

## The Foundational Crisis

At the turn of the 20th century, math was in trouble. It was undergoing what came to be called *the foundational crisis of mathematics*.

At the time, set theory had come to serve as the foundation of mathematics. All mathematical proofs ultimately relied on it.

But in 1899, Ernst Zermelo noticed this set theory had a fatal flaw. Zermelo told other math professors at the University of Göttingen about it, including David Hilbert, but Zermelo didn't publish it.

In 1901, Bertrand Russell also noticed this flaw. But Russell didn't stay quiet. He wrote a letter in 1902 to Gottlob Frege, just as his second volume on set theory was going off to the publisher.

Frege had spent decades laying the foundation of set theory. It was his life's work. But one letter, showing one flaw, brought it all down.

Russell showed Frege's set theory allows two contradictory statements to both be proved. This flaw is known as *Russell's paradox*.

One flaw might not sound so bad, but in math it is fatal. For if in math, just one falsehood can be proved, then any falsehood can be proved.

This is known as the *principle of explosion*.

For example, assume mathematics had a flaw that allowed you to prove that "2 + 2 = 5". You could use this false proof to prove anything. You could prove that the $1 in your bank account equals $1,000,000.

| | |
|---|---|
| $2 + 2 = 5$ | (given) |
| $0 = 1$ | (subtract 4 from both sides) |
| $0 = 999{,}999$ | (multiply both sides by 999,999) |
| $1 = 1{,}000{,}000$ | (add 1 to both sides) |

If math allowed proofs of false statements, then contracts, commerce — even society as we know it — couldn't function. This was the state of mathematics in 1900 — it's no wonder it was considered a crisis.

Math was broken. It had to be fixed. It needed a rallying cry.

## A Call to Action

In 1900, mathematicians from around the world gathered in Paris for the International Congress of Mathematicians.

Mathematicians from around the globe gathered in Paris in 1900.

David Hilbert, considered the greatest mathematician of his time, was invited to speak. He used the opportunity to present what he considered to be the 23 most significant open problems in mathematics.

The second of Hilbert's problems called for a proof that the foundational rules of mathematics were free of contradictions.

This would, once and for all, put math on a solid foundation. Never again would mathematicians need worry that a new contradiction might one day surface and torpedo the whole of mathematics.

## New Foundations

The collapse of Frege's set theory and Hilbert's call for a provably solid foundation for math served as an inspiration.

Under Hilbert's direction, Zermelo, began work on fixing set theory.

Similarly, Bertrand Russell began work with his supervisor, Alfred North Whitehead, on a solution. Their aim was to lay a new foundation for mathematics based on a precise logic, and produce a set theory rid of paradoxes and contradictions.

It was a massive undertaking that took over a decade. It culminated in the three volume tome *Principia Mathematica*, published in 1910, 1912, and 1913. It was so detailed, that it famously required several hundred pages to work up to the point where it proved '1 + 1 = 2'.

The three volume set of *Principia Mathematica*, (The Principles of Mathematics), took Russell and Whitehead over a decade to write. Image Credit: Lars Tyge Nielsen

Owing to its complexity and unique notation, Principia Mathematica never gained much popularity with mathematicians.

It also had a competitor.

By 1908, Zermelo developed a new set theory, consisting of just eight rules. And in 1921, it was further improved by Abraham Fraenkel. Their combined result is called *Zermelo-Fraenkel set theory*. It became the default foundation of mathematics, and remains so to this day.

## Hilbert's Program

Although no one had discovered contradictions in either Russell's or Zermelo's new foundational systems, no one had been able to prove they were free of contradictions either.

Mathematics still rested on a foundation of uncertain stability.

This led Hilbert, in 1921, to push for finding a mathematical theory that was provably *consistent*. And not only did he want this theory to be provably consistent, he wanted it to be provably *complete*.

A complete system of mathematics means any true statement can be proven within that theory. There would never be a need to add to this complete theory, as it would cover everything that mathematicians might think up in the future. It would be a final theory and the last theory any mathematician would ever need.

It was the mathematician's equivalent of a *theory of everything* — where all of mathematics is derivable from one rock-solid foundation.

The effort to find this theory became known as Hilbert's Program.

It was a noble goal. But less than a decade after launching his program, Hilbert's dream of a final theory was shattered.

In 1930, at a conference in Königsberg, Hilbert remained confident in the eventual success of his program, proclaiming: “Wir müssen wissen. Wir werden wissen.” — “We must know. We will know.”

The phrase would later be Hilbert’s epitaph. His tombstone in Göttingen is inscribed: “Wir müssen wissen. Wir werden wissen.” Image Credit: Wikimedia

## Gödel’s Incompleteness Theorems

Unknown to Hilbert, his dream had already been crushed. The day before, at the very same conference, the 24-year-old Kurt Gödel presented his PhD thesis. It proved Hilbert’s dream is impossible.

At the conference Gödel presented his *First Incompleteness Theorem*. It showed that in any finite mathematical foundation, there will be true statements that can’t be proved in that theory.

Thus Hilbert’s dream of *completeness* is impossible.

> The most comprehensive current formal systems are the system of Principia Mathematica (PM) on the one hand, the Zermelo-Fraenkelian axiom-system of set theory on the other hand. These two systems are so far developed that you can formalize in them all proof methods that are currently in use in mathematics, i.e. you can reduce these proof methods to a few axioms and deduction rules. Therefore, the conclusion seems plausible that these deduction rules are sufficient to decide all mathematical questions expressible in those systems. We will show that this is not true.
>
> *— Kurt Gödel in “On formally undecidable propositions of Principia Mathematica and related systems I” (1931)*

Gödel’s first incompleteness theorem showed there could never be a final theory that would serve mathematicians for all time.

Gödel wasn’t finished.

Shortly thereafter, he published his *Second Incompleteness Theorem*. This proved that no consistent theory of mathematics can ever prove itself to be consistent. The 2nd of Hilbert's 23 problems was impossible.

This explained the failure of Zermelo in proving the consistency of his set theory. It was actually a good sign that he was unable to — had he been able to prove it consistent, it would imply that it was not.

So now, not only was completeness impossible, but it was also impossible for a theory to prove its own consistency.

This was a double whammy to Hilbert. Hilbert lived another 12 years but he never publicly acknowledged Gödel's result. Privately, he was crushed — he didn't want mathematics to be this way.

But others greatly admired Gödel and his achievement.

When Harvard gave Gödel an honorary degree, he was introduced as "The discoverer of the most significant mathematical truth in the century." Some called Gödel "the greatest logician since Aristotle." Edward Nelson called Aristotle "the greatest logician before Gödel."

John von Neumann said, "Gödel is absolutely irreplaceable; he is the only mathematician alive about whom I would dare make this statement."

Einstein and Gödel both worked at the Institute for Advanced Study. Near the end of his life, Einstein confided to Oskar Morgenstern that his "own work no longer meant much, that he came to the Institute merely to have the privilege of walking home with Gödel."

### Undecidability

In 1673, Leibniz invented and later built the first digital calculator. He declared, "It is beneath the dignity of excellent men to waste their time in calculation when any peasant could do the work just as accurately with the aid of a machine."

After he built the device, Leibniz began to wonder about the limits of what machines can calculate: was it possible to build a machine that could answer any mathematical question?

Several centuries later, David Hilbert together with Wilhelm Ackermann refined Leibniz's question. At a conference in Berlin in 1928, they defined the *Entscheidungsproblem* (or *decision problem*).

The decision problem asks: is it possible to build a machine that can decide whether or not any mathematical question can be proved in some mathematical system?

Gödel showed that not every true statement was provable, but was there a way to decide whether or not a statement was provable?

It was an important question.

Such a method would be most useful to mathematicians. It would tell them when they ought to give up, and thereby save them from wasting their lives searching for proofs that don't exist.

Alonzo Church got the first result on the Entscheidungsproblem. He defined a programming language, and proved certain questions about it are *undecidable*.

> It follows that the Entscheidungsproblem is unsolvable in the case of any system of symbolic logic which is [consistent] in the sense of Gödel.
>
> *— Alonzo Church in "An Unsolvable Problem of Elementary Number Theory" (1935)*

The next year, Church's student, Alan Turing, published another example of an undecidable problem — the *halting problem*.

> Gödel has shown that there are propositions ***U*** such that neither ***U*** nor [***not U***] is provable. [...] On the other hand, I shall show that there is no general method which tells whether a given formula ***U*** is provable.
>
> *— Alan Turing in "On Computable Numbers, with an Application to the Entscheidungsproblem" (1936)*

It was in this paper that Turing introduced the concept of a general purpose programmable computer, birthing the digital age.

The code breaking Bombe computer was devised by Alan Turing to break German codes.

Hilbert never got the answers he hoped for. We can't prove the consistency of a mathematical foundation. We can't prove everything that is true, and given undecidability, we can't even be sure whether a statement has a proof or not.

And yet, despite not getting the answers he hoped for, Hilbert knew the right questions to ask. The answers produced great discoveries.

> I'd like to make the outrageous claim, that has a little bit of truth, that actually all of this that's happening now with the computer taking over the world, the digitalization of our society, of information in human society, you could say in a way is the result of a philosophical question that was raised by David Hilbert at the beginning of the century.
>
> *— Gregory Chaitin in "A Century of Controversy Over the Foundations of Mathematics" (2000)*

### Hilbert's 10th Problem

Of Hilbert's 23 problems, his 10th problem asked for a general method to solve *Diophantine equations*. These are equations that allow only whole numbers, (no decimals or fractions), which are named after Diophantus who studied them in the 3rd century.

> Given a Diophantine equation with any number of unknown quantities and with rational integral numerical coefficients: *To devise a process according to which it can be determined in a finite number of operations whether the equation is solvable in rational integers.*
>
> *— David Hilbert in "Mathematical problems" (1902)*

Deceptively simple Diophantine equations were often notoriously difficult. A famous example is the Diophantine equation:

$$a^n = b^n + c^n$$

This equation is easy when $n = 1$, or when $n = 2$. Millennia ago Pythagoras proved there were infinite solutions when $n = 2$.

And yet, no one had found even one solution for $n \geq 3$. No one knew of a cube number ($a^3$) that was the sum of two other cube numbers.

In 1673, Pierre de Fermat wrote in his notes that he had a proof that there were no solutions when $n \geq 3$. But no one had ever found it, nor was anyone able to rediscover a proof.

The missing proof became known as *Fermat's last theorem*.

The problem went unsolved for 321 years. Until in 1994, after seven years of work, Andrew Wiles completed a 129-page proof that no whole number solutions exist when $n \geq 3$.

If mathematicians had a procedure to solve Diophantine equations, Andrew Wiles wouldn't have had to spend seven years working on this problem. Instead, he could program a computer to follow the procedure and the computer would crank out a solution.

In 1970, Hilbert's 10th problem was solved.

Solving it required 21 years of work by four mathematicians: Martin Davis, Julia Robinson, Hilary Putnam and Yuri Matijasevič.

Their proof, called the *MRDP-Theorem* (after their initials), gave a negative result. They proved there is no general procedure for solving Diophantine equations — and they proved it in a shocking way.

They showed an equivalence between solutions to Diophantine equations and what is computable. In other words, for any imaginable computer program, there is a Diophantine equation whose solutions equal all the outputs of that computer program.

This was so surprising that many mathematicians had difficulty believing it. It meant there is a Diophantine equation that picks chess moves like Deep Blue, and there's a Diophantine equation that does your taxes like TurboTax, and there's yet another Diophantine equation that does spellchecking like Microsoft Word.

For anything a computer can compute, there's a Diophantine equation that gives the exact same answers.

But despite how surprising their result was, it was true.

And this is why there can be no general method for solving Diophantine equations: because the question of whether or not a program finishes (Turing's halting problem) is equivalent to asking whether or not some Diophantine equation has solutions.

Since the halting problem is not generally solvable, the equivalence between Diophantine equations and computers meant Diophantine equations weren't generally solvable either.

Yet again, what Hilbert asked for couldn't be provided.

Hilbert's questions probed at the heart of *consistency*, *provability*, *decidability*, and *computability*. They didn't lead where he expected, but they did reveal deep truths about the nature of mathematics.

## Universal Equations

In 1978, the mathematician James P. Jones went a step further. Just as it is possible to make a computer program that runs all other computer programs, it is also possible to make a Diophantine equation that includes all other Diophantine equations.

> Matijasevič's Theorem implies also the existence of particular undecidable diophantine equations. In fact there must exist universal diophantine equations, polynomial analogues of the universal Turing machine.
>
> — *James P. Jones* in *"Undecidable Diophantine Equations"* (1980)

Such Diophantine equations *are* general purpose computers: plug in the 'program' as one of the variables to the equation, and the solutions to the equation will be the outputs of that program.

Jones provided an example of such an equation. It is complex, but the truths concerning this *single equation* include *all truths* concerning the executions and outputs of *all computer programs*.

In order that $x \in W_v$ it is necessary and sufficient that the following equation has a solution in positive integers:

$$
\begin{gathered}
(v-(((zuy)^2+u)^2+y))^2+(elg^2+\alpha-(b-xy)q^2)^2+\\
(q-b^{5^{60}})^2+(\lambda+q^4-(1+\lambda b^5))^2+\\
(\theta+2z-b^5)^2+(l-(u+t\theta))^2+(e-(y+m\theta))^2+\\
(n-q^{16})^2+(r-([g+eq^3+lq^5+(2(e-z\lambda)(1+xb^5+g)^4+\\
\lambda b^5+\lambda b^5q^4)q^4][n^2-n]+[q^3-bl+l+\theta\lambda q^3+\\
(b^5-2)q^5][n^2-1]))^2+(p-2ws^2r^2n^2)^2+\\
(p^2k^2-k^2+1-\tau^2)^2+(4(c-ksn^2)^2+\eta-k^2)^2+\\
(k-(r+1+hp-h))^2+(a-(wn^2+1)rsn^2)^2+\\
(c-(2r+1+\varphi))^2+(d-(bw+ca-2c+4\alpha\gamma-5\gamma))^2+\\
(d^2-((a^2-1)c^2+1))^2+(f^2-((a^2-1)i^2c^4+1))^2+\\
((d+of)^2-(((a+f^2(d^2-a))^2-1)(2r+1+jc)^2+1))^2=0
\end{gathered}
$$

> As [v] varies through the positive integers, the [equation] defines every recursively enumerable set. This is, to our mind, the attraction of the universal equations. At once, [this equation defines] primes, Fibonacci numbers, Lucas numbers, perfect numbers, theorems of ZF, or indeed theorems of any other axiomatizable theory.
>
> — *James P. Jones* in *"Three Universal Representations of Recursively Enumerable Sets"* (1978)

We might consider such universal equations as '*God Equations*' — equations whose solutions contain and include all the others.

In his 1987 book Algorithmic Information Theory, Gregory Chaitin describes one such equation: the "*Exponential Diophantine Equation Computer*." It has 20,000 variables and is two hundred pages long.

This equation perfectly replicates the behavior of the LISP programming language. He describes the equation as follows:

> If the LISP expression $k$ has no value, then this equation will have no solution. If the LISP expression $k$ has a value, then this equation will have exactly one solution. In this unique solution, $n$ = the value of the expression $k$.
>
> *— Gregory Chaitin in "META MATH! The Quest for Omega" (2004)*

Chaitin showed that even modern day computers and programming languages have counterparts in the form of Diophantine equations.

Universal Diophantine equations are remarkable. They exist in pure arithmetic. The arithmetical relations they encode represent every program that can be computed along with all of their outputs.

Among these solutions we can find the valid proofs of every theorem in every mathematical system, every way of playing every computer game that has or will ever be invented, and simulations of every galaxy in the observable universe down to the atomic level.

Universal Diophantine equations contain in their solutions everything computable. Since known physical laws are computable, quantum-detailed histories of every particle interaction in the observable universe are counted among these solutions. Image Credit: Wikipedia

Jones's discovery of universal Diophantine equations inspired him to quote chapter 11, verse 7 of the Bhagavad Gita: "Whatever you wish can be seen all at once right here. This universal form can show you all that you now desire. Everything is here completely."

Given that such equations include everything computable, including all physical laws and systems as well as simulations of any observer's mind and brain — could these equations be the glue connecting eternal mathematical truths with contingent physical truths?

### The Universal Dovetailer

In 1991, Bruno Marchal wrote a program he called the *Universal Dovetailer* — a program that generates and runs all programs.

In order to run every program without getting stuck on a program that never ends, the Universal Dovetailer interleaves, or *dovetails*, on the processing, doing a little bit of work on each program at a time.

The program is simple. The full program is quite short, consisting of about 300 lines of LISP code. Its *pseudocode* is even simpler:

```
for k from 0 to ∞:
    for j from 0 to k:
        for i from 0 to j:
            // Compute k steps of program i on input j
```

This program sequentially generates every program and runs it for every input. The longer the Universal Dovetailer runs, the more programs it generates and the more steps of each program it performs. If allowed to run forever, it runs every program there is.

The Universal Dovetailer, like a *fractal*, is itself simple and yet it generates infinite complexity. “For that which generates is always simpler than that which is generated.” — Plotinus in “*The Enneads* III.8.9” (270 A.D.)

This program, like universal Diophantine equations, contains all.

While studying the consequences of the existence of all computations, Marchal made an incredible discovery: what he describes as the “*many-histories interpretation* of elementary arithmetic.”

The discovery served as the basis of his 1998 PhD thesis, *Computability, Physics and Cognition*. This paper explains how we can explain the appearance of a multiverse given two assumptions:

1. All computations exist
2. Computation supports cognition

> We will explain that once we adopt the computationalist hypothesis, which is a form of mechanist assumption, we have to derive from it how our belief in the physical laws can emerge from only arithmetic and classical computer science.
>
> *— Bruno Marchal in "The computationalist reformulation of the mind-body problem" (2013)*

Given there exist universal Diophantine equations, all computations exist as a consequence of arithmetical truth concerning them.

While there is no physical realization of the perpetual execution of the Universal Dovetailer, its complete execution exists in number theory as a consequence of arithmetical truth. There are, for instance, Diophantine equations whose solutions exactly equal all the sequentially generated states reached by the Universal Dovetailer.

So if we accept the self-existent truth of '2 + 2 = 4', we must also accept truths concerning universal Diophantine equations — truths that concern all computational histories and *all simulated realities*.

> To be sure, the existence of the UD is a logical consequence of elementary arithmetic with Church's thesis or Turing's thesis.
>
> *— Bruno Marchal in discussion list (2019)*

It therefore becomes a *purely mathematical* question to prove whether some Diophantine equation contains in its solutions a computational state equivalent to some person's physical brain state.

We would then exist for the same reason that '2 + 2 = 4' — as an inevitable consequence of mathematical truth. The question "Why is there anything at all?" is reduced to "Why does 2 + 2 = 4?"

## A Story of Creation

We have arrived at a plausible story of creation.

We can now connect the *causeless* abstract entities: logic, truth, and numbers, with a viable *cause* for our perceptions of a physical reality.

> *Why does anything exist?*

Because necessity requires logical laws; logical laws imply incontrovertible truth; such truth includes mathematical truth; mathematical truth defines numbers; numbers possess number relations; number relations imply equations; equations define computable relations; computable relations define all computations; all computations include algorithmically generated observers; and these observers experience apparent physical realities.

### Ancient Anticipations

This account of how eternal mathematical truths could give rise to contingent physical truths depended on recent discoveries.

It required a deep understanding of modern ideas: universal equations, computers, computation, virtual reality, and simulation.

Only a century ago, we didn't even have words for these concepts. Despite this, a few ancient thinkers gave theories for existence that are eerily similar to this modern creation story.

They postulated something primal and simple that gave rise to the numbers, and from numbers arose beings, consciousness, and matter.

2,600 years ago, Laozi wrote that numbers proceed from *The Tao* and that from numbers that all things are born:

> The Tao gives birth to One.
> One gives birth to Two.
> Two gives birth to Three.
> Three gives birth to all things.
>
> *— Laozi in chapter 42 of "Tao Te Ching" (c. 600 B.C.)*

Diogenes Laërtius was a biographer of eminent philosophers. The following is his account of 2,500-year-old Pythaogrean beliefs:

> That the monad (one) was the beginning of everything. From the monad proceeds an indefinite duad (two), which is subordinate to the monad as to its cause. That from the monad and the indefinite duad proceed numbers. And from numbers signs. And from these last, lines of which plane figures consist. And from plane figures are derived solid bodies. And from solid bodies sensible bodies.
>
> *— Diogenes Laërtius in "The Lives and Opinions of Eminent Philosophers" (c. 225 A.D.)*

1,750 years ago, Plotinus developed *neoplatonism* — a rich theory concerning the relations between various levels of being.

Wikipedia describes Plotinus's *chain of being* as a series of emanations: "The first emanation is *Nous* (Divine Mind, *Logos*, Order, Thought, Reason) [...] From *Nous* proceeds the World Soul. [...] From the world soul proceeds individual human souls, and finally, matter, at the lowest level of being and thus the least perfected level of the cosmos."

> The One is not a Being but the generator of Being. [V.2.1]
>
> The greatest, later than the [One], must be the [Intellectual-Principle], and it must be the second of all existence. [V.1.6] For what emanates from the Intellectual-Principle is a Reason-Principle, a Logos. [III.2.2]
>
> And as soon as there is differentiation, number exists. [V.1.5] Thus Number, the primal and true, is Principle and source of actuality to the Beings. [VI.6.15]
>
> [The Soul's] substantial-existence comes from the Intellectual-Principle. [V.1.3] The Soul, itself a Divine Thought and possessing the Divine Thoughts, or Ideas, of all things, contains all things concentred within it. [III.6.18]
>
> This gives the degree in which the kosmos is ensouled, not by a soul belonging to it, but by one present to it; it is mastered not master; not possessor but possessed. [IV.3.9] This one universe is all bound together in shared experience. [IV.4.32] So matter is actually a phantasm. [II.5.5]
>
> *— Plotinus in "The Enneads" (270 A.D.)*

1,570 years ago, Proclus wrote that mathematical existence occupies a middle ground. He said mathematical being sits between the *simple reality that's grounded in itself* and the *things that move about in matter*.

> Mathematical being necessarily belongs neither among the first nor among the last and least simple of the kinds of being, but occupies the middle ground between the partless realities—simple, incomposite, and indivisible—and divisible things characterized by every variety of composition and differentiation. The unchangeable, stable, and incontrovertible character of the propositions about it shows that it is superior to the kinds of things that move about in matter. But the discursiveness of [mathematical] procedure, in dealing with its subjects as extended, and its setting up of different prior principles for different objects—these give to mathematical being a rank below that indivisible nature that is completely grounded in itself.
>
> *— Proclus in "A Commentary on the First Book of Euclid's Elements" (c. 450 A.D.)*

## The Causeless Cause Found?

Could this be the answer? Could things be so simple?

In order for this explanation of existence to be correct, mathematical truth must be causeless. Mathematical existence must depend on neither human minds, nor on physical or material things.

In addition, mathematical truth must be something capable of generating observers — observers who consciously perceive their environment and which they consider as existing physically.

Ideally, this *causeless cause* will illuminate the relation between the mental and material, and explain why the universe obeys simple laws.

Can the theory achieve this?

### Is it Causeless?

For mathematical truth to serve as a causeless cause, it must exist causelessly. Math must depend on neither minds nor matter.

#### Independent of Minds

Do numbers and their properties exist beyond the minds of mathematicians and their scribblings on blackboards?

Does math only exist as a product of human minds?

Had Hilbert’s program succeeded, and given a mathematical theory capable of proving all true statements, then arguably, mathematics might only be that which follows from this theory. Math would then be an invention of the human mind.

But the failure of Hilbert’s program, and Gödel’s proof of the impossibility for any finite theory to define all mathematical truth, meant that mathematical truth is infinite and beyond description, and therefore cannot be a product of human minds.

> [The existence of] absolutely undecidable mathematical propositions, seems to disprove the view that mathematics is only our own creation; for the creator necessarily knows all properties of his creatures, because they can't have any others except those he has given to them. So this alternative seems to imply that mathematical objects and facts (or at least *something* in them) exist objectively and independently of our mental acts and decisions, that is to say, [it seems to imply] some form or other of Platonism or 'realism' as to the mathematical objects.
>
> *— Kurt Gödel in "Some basic theorems on the foundations of mathematics and their implications p. 311" (1951)*

(See: "*Is math invented or discovered?*")

#### Independent of Matter

The infinite nature of mathematical truth also implies an independence from matter. Our observable universe has an information capacity of $10^{120}$ bits. This number is large, but finite.

An artist's representation of the finite observable universe. Image Credit: Wikimedia

Nowhere in physics, is there room to store, represent, or hold the infinite true statements of mathematics. If there are infinite primes, infinite factors of zero, infinite digits of $\pi$, they don't exist physically.

If these infinite properties don't and can't depend on physical processes operating within a material universe, it follows that mathematical properties must exist independently of matter.

> It is our firm belief that the Pythagorean theorem needs not be created, nor the fact that the circumference of a circle is 3.14… times the diameter; the laws of nature and the collection of truths, values and their interrelations are primordial and have always existed.
>
> *— C. W. Rietdijk in "Four-dimensional reality continued" (2018)*

#### Is it the Cause?

For this story to work, abstract objects: truth, numbers, equations, and so on, must play a causal role in generating reality and perceptions.

The default position of philosophers has been that abstract objects have no effects — *they cause and do nothing*. But we must admit that this has always been an assumption, it's never been proven.

> Although philosophers deny that abstract objects can have causal effects on concrete objects (abstract objects are often defined as causally inert), their potential, say as a collective, to be an explanatory source of ultimate reality cannot be logically excluded.
>
> *— John A. Leslie and Robert Lawrence Kuhn in "The Mystery of Existence" (2013)*

Recent advances in mathematics give us pause. The discovery that all computations exist as a consequence of mathematical truth, makes us wonder whether abstract mathematics is really so ineffectual.

But can mind or matter really be created by math?

#### The Cause of Minds

*Consciousness* remains one of humanity's last great mysteries. While science has not settled the question of what consciousness is, it has progressed by developing a testable theory of consciousness.

In the 1600s, thinkers such as René Descartes and Thomas Hobbes advanced the idea of *mechanism* — the theory that our brains and bodies are machines that operate according to mechanical rules.

In 1936, the discovery of *universal machines* (or computers) led to the *Church-Turing thesis*, which says the behavior of any finite machine can be perfectly replicated by an appropriately programmed computer.

This is their special power. It is what makes computers so useful.

Without changing your computer's hardware, it is able to run any one of the millions of applications available to it, including applications not yet developed or conceived of. Each new application provides the computer with new functionality and behaviors.

Some were quick to recognize the implications of the *Church-Turing thesis* for theories of minds, brains, and consciousness.

The two fathers of computing, Alan Turing and John von Neumann, noticed parallels between computers and the mind. In 1948, Turing wrote the first chess playing program and in his 1950 paper *Computing Machinery and Intelligence*, Turing asked, "Can machines think?"

The last work of John von Neumann was a lecture series: *The Computer and the Brain*, published posthumously in 1958. In it von Neumann explains that it is not that the brain acts like a computer, but that computers are so varied in what they can do, that they can be set up to imitate any machine — presumably even the human brain.

> The important result of Turing's is that in this way the first [universal] machine can be caused to imitate the behavior of any other machine.
>
> *— John von Neumann in "The Computer and the Brain" (1958)*

In the 1960s and 1970s, philosophers of mind including Hilary Putnam and his student Jerry Fodor developed what they called *functionalism*. In its digital form, functionalism is known as the *Computational Theory of Mind* (or *computationalism*). This is the idea that function, or computation, is the foundation of consciousness.

The computational theory of mind remains as the most popular theory for consciousness among scientists and philosophers.

> Computationalism, or digital mechanism, or simply mechanism, is [a] hypothesis in the cognitive science according to which we can be emulated by a computer without changing our private subjective feeling.
>
> *— Bruno Marchal in "The computationalist reformulation of the mind-body problem" (2013)*

If the computational theory of mind is true, then mathematics *can* explain where observers come from. Observers would be found among the infinite computational histories within arithmetical truth. (See: “*What is consciousness?*” and “*Can a machine be conscious?*“)

Recent discoveries in physics lend support to computationalism.

In 1981, Jacob Bekenstein discovered a physical limit now known as the *Bekenstein bound*. This bound says that a physical system of finite mass and volume can contain, at most, a finite amount of information. This applies to any finite physical system: a brain, the Earth, the Solar System, our galaxy, or the observable universe.

Given that the observable universe has a finite mass and volume, it follows by the *Bekenstein bound* that it has a finite description.

Given that it has a finite description, it follows by the *Church-Turing thesis* that the evolution of the observable universe is something that is perfectly replicated by a certain computer program.

This program contains a version of you, me, the Earth and everyone and everything present in our universe. Our shared histories and memories would be identical. But the question remains: are these computational doppelgängers *conscious* like we are?

If we inspected the contents of this computer program, we would find analogues of all the objects of our own universe. We would find the same books, articles, and movies. Among these we would even find many works on the mysterious nature of consciousness.

Here are books on consciousness found in our observable universe. These same books will also appear in a purely computational version of our universe — written by *computational authors* — who apparently are just as baffled by their conscious experiences as we are.

If these purely computational versions of us are not conscious, what drives them to write and read books about consciousness?

If, on the other hand, they are just as conscious as we are, then the idea of a separately existing physical reality becomes redundant. In that case, for all we know, we *are* these computational versions!

We would then exist as pure computations. We would inhabit the computational histories of simulated realities that exist only as a consequence of mathematical truth concerning universal equations.

Every imaginable computation is realized in arithmetic as true relations about these universal equations. This includes the computations that describe you, your environment, and even the evolving state of your brain as it processes this very sentence.

If computationalism is right, this is who we are.

> We'll explore the fascinating relations between computation, mathematics, physics and mind, and explore a crazy-sounding belief of mine that our physical world not only is *described* by mathematics, but that it *is* mathematics, making us self-aware parts of a giant mathematical object.
>
> *— Max Tegmark in "Our Mathematical Universe" (2014)*

### The Cause of Matter

Can mathematical truth, with its inherent infinite collection of computational histories, explain matter, physical laws and universes?

Concretely existing things. Bricks, stones, houses, matter, planets, universes.

How can abstract things, like truth, numbers, computations, give rise to concrete things like chairs, bricks, and houses?

What's the difference between *abstract existence* vs. *concrete existence*?

Some say the difference is only a matter of perspective. To a being who inhabits an abstract object, (be it an abstract mathematical object or abstractly existing computation), it seems concrete to them.

> This equivalence between physical and mathematical existence means that if a mathematical structure contains a [self-aware substructure], it will perceive itself as existing in a physically real world, just as we do.
>
> *— Max Tegmark in "The Mathematical Universe" (2007)*

The relative aspect of concrete existence, is explicit in Markus Müller's definition of physical existence:

> Given two objects A and B, we say that they [physically exist] for each other if and only if, under certain auxiliary conditions, modifying the state of A will affect the state of B, and vice versa.
>
> *— Markus Müller in "Could the physical world be emergent instead of fundamental, and why should we ask?" (2017)*

Whenever a conscious observer experiences or interacts with another object, that object appears concrete to that observer — even if, from another point of view, both that observer and object seem abstract.

Of the modes of existence, this understanding implies *mind over matter*.

Math produces an infinity of conscious minds, and the perceptions of these minds include experiences of material realities.

It is not matter that produces mind and mind that produces math, but the reverse.

Computationalism, together with the mathematical existence of all computations, leads to a causal reversal between mind and matter.

> What results is not a primitive matter with consciousness emerging from its organisation but the reverse: consciousness is now the more primitive and matter, or rather the appearance of material organisation, emerges from all the possible experiences of all the possible consciousnesses.
>
> *— Bruno Marchal in "The Amoeba's Secret" (2014)*

Matter is then, as Plotinus supposed, a *phantasm*.

### Is This Testable?

This is a big pill to swallow. Are we to take as serious the idea that we live inside an equation? And this equation somehow produces all computations by virtue of its solutions? And that the whole physical universe is just some kind of shared hallucination?

*Extraordinary claims require extraordinary evidence*.

Unless there is a way to test and either confirm or falsify this theory, we are not operating in the realm of science, but fantasy.

Fortunately, there is a way to test this theory.

Due to the fact that not all programs appear with equal frequency, a particular bias should appear in the resulting computational histories.

We can then check for this bias by comparing our observations of the character of physical law and the properties of our universe against the predictions made by the theory.

Not all predictions of a theory are necessarily testable, but the more predictions of a theory we test and confirm, the more our confidence in that theory grows.

If our observations match the predictions, we gain evidence in support of the theory. If they don't match, we rule the theory out.

This is how all theories are tested.

### Algorithmic Information Theory

The reason not all programs occur with equal frequency is due to a consequence of *algorithmic information theory* (or AIT).

This field was developed by Ray Solomonoff, Andrey Kolmogorov and Gregory Chaitin, starting in the 1960s.

Chaitin says, "AIT is the result of putting Shannon's information theory and Turing's computability theory into a cocktail shaker and shaking vigorously. The basic idea is to measure the complexity of an object by the size in bits of the smallest program for computing it.”

Across the infinite programs executed by universal equations, some programs exhibit identical behavior. This is because the program’s code may instruct it to read only a fraction of its total available code.

Above we see *bit-strings* representing programs executed by universal equations. The bold digits represent bits read by the program. Highlighted in blue, are two different bit strings, which nonetheless result in identical program behavior, since the bits read are identical.

Programs that complete are naturally *self-delimiting*. They define their own length by virtue of reading only a finite number of bits.

Above we see two equivalent programs highlighted in blue, both of these programs are defined by the same 9-bit prefix.

Given that this program length is 9 bits, we can calculate that this program should appear once every $2^9$ (or 512) bit strings. Self-delimited 10-bit programs would be half as common, appearing once every $2^{10}$ (or 1,024) programs. Conversely, 8-bit programs are twice as common as 9-bit ones.

We can use this consequence of algorithmic information theory to make several predictions about the character of physical law.

> The main point is that the derivation is constructive, and it provides the technical means to derive physics from arithmetic, and this will make the computationalist hypothesis empirically testable, and thus scientific in the Popperian analysis of science.
>
> *— Bruno Marchal in “The computationalist reformulation of the mind-body problem” (2013)*

## Confirming Evidence

Could such a bold theory be true?

For now, let's neither accept nor reject this theory. To do either before weighing the evidence would be premature.

So let us not believe anything and maintain an open mind. For the time, we will only *play with the idea* and see where it leads.

As with any theory, the only path forward is to see what this theory predicts and then to compare the predictions with our observations.

If we find it leads in a fruitful direction, by making predictions we can confirm and by not making predictions we can refute, then we will have cause to tentatively accept this theory.

## Predictions of the Theory

Does the reality we see fit predictions of a reality generated by the infinite computations inherent to causeless arithmetical truth?

For that matter, what are the predictions?

At first blush, it seems impossible to get any useful predictions from a theory that includes all computations and all observations. For if they all exist, any observation is compatible with the theory. As Victor Stenger noted, "Theories that explain everything explain nothing."

Fortunately, there is a catch: not all observations are equally likely.

If our conscious states result from the existence of all computations, then they are subject to the rules of algorithmic information theory.

This enables us to make testable predictions, and thereby tie it back to hard science, observation, and measurement.

Some of the predictions of this theory provide clues to otherwise unsolvable questions in *physics* and *cosmogeny*. These predictions offer answers to such fundamental mysteries as:

- Why the universe obeys simple, mathematical, life-friendly laws
  - Why *empiricism* (i.e. experimental reproducibility) works
  - Why *Occam's Razor* works
  - Why the laws appear fine-tuned for life
- Why the laws are quantum mechanical
  - Why uncertainty and randomness exist in physics
  - Why infinite descriptions are needed to explain any occurrence
- Why observation and information are fundamental in physics
- Why the universe has time and a beginning (e.g., the *big bang*)

These results are the work of pioneers in the theory, who include Bruno Marchal, Max Tegmark, Russell Standish, and Markus Müller.

Using the tools of computer science, math, information theory, and algorithmic information theory, they revealed how these traits of the universe result from our *mind states* being computationally-generated.

> The appearance of a universe, or even universes, must be explained by the geometry of possible computations.
>
> *— Bruno Marchal in “The Amoeba’s Secret” (2014)*

Let’s review the evidence for this most speculative of theories, which is presently at the forefront of mathematics and physics.

### Why Laws?

We take for granted that our universe obeys laws. But why should it?

What’s the source of these laws? Why are they so simple? Why aren’t they ever violated? Why these laws and not others?

All these questions are mysteries left unaddressed by science.

> In the orthodox view, the laws of physics are floating in an explanatory void. Ironically, the essence of the scientific method is rationality and logic: we suppose that things are the way they are for a reason. Yet when it comes to the laws of physics themselves, well, we are asked to accept that they exist “reasonlessly”.
>
> *— Paul Davies in “The flexi-laws of physics” (2007)*

> With the equations, when they are not too complicated, we can predict phenomena. But in truth, the equation doesn’t explain anything. It compresses, certainly, in a very ingenious way, the description of the physical world, but it does not explain the nature of bodies nor why these bodies obey laws, nor from where these laws come.
>
> *— Bruno Marchal in “The Amoeba’s Secret” (2014)*

That laws are never violated, on its face, seems highly improbable. For in the space of possibility, for each way there is for the universe to obey the laws, there are infinite ways it might deviate from them.

> For each law-governed world, there are countless variants that would fail in different ways to be wholly law-governed.
>
> *— Derek Parfit in “Why Anything? Why This?” (2008)*

Why the laws hold is unknown to science. And yet, this feature of reality is the very basis that allows us to do science.

Without consistent laws, experimental outcomes can't be reproduced or predicted.

A lawful universe is the basis of *empiricism*. It is why we can repeat experiments, and make predictions about the future based on past observations. But why does this work, and why should it work?

Marchal explains the emergence of laws as a consequence of the computational reality. He says the laws are the '*consistent extensions'* of programs that produce the observer's mind state.

> Arithmetic contains or executes all computations. Your first person is distributed on all computations going through your current first person state. To make any prediction on the future of your possible inputs, you need to take all the computations into account, and the laws of physics is what is invariant in all consistent extensions.
>
> *— Bruno Marchal in discussion list (2019)*

Müller goes further, and gives a mathematical proof that shows why, given algorithmic information theory, observers will, with high probability, observe a '*persistence of regularities*' (i.e. laws).

> That is, computable regularities that were holding in the past tend to persist in the future. […]
>
> Intuitively, highly compressible histories are those that contain regularities which can be used to generate shorter descriptions.
>
> *— Markus Müller in "Law without law: from observer states to physics via algorithmic information theory" (2020)*

Because most programs are simple, and simple programs tend to keep doing what they have been doing, this gives the appearance of a fixed set of laws that holds into the future as the program unfolds.

So in a sense, the laws of physics are the rules of the programs that instantiate us, as seen by those of us inside those programs.

### Why the Laws are Mathematical

It has long been recognized that mathematics is "*unreasonably effective*" in describing the physical laws. In 1623, Galileo wrote, "[The universe] is written in the language of mathematics."

This connection between math and physics still puzzles scientists.

> The miracle of the appropriateness of the language of mathematics for the formulation of the laws of physics is a wonderful gift which we neither understand nor deserve. We should be grateful for it and hope that it will remain valid in future research and that it will extend, for better or for worse, to our pleasure, even though perhaps also to our bafflement, to wide branches of learning.
>
> — *Eugene Wigner* in *"The Unreasonable Effectiveness of Mathematics in the Natural Sciences* (1960)

Mathematical patterns appear everywhere in nature.

But why should physics be so mathematical? Tegmark offers a simple explanation: because physical theories result from our perceptions of what are ultimately mathematical structures.

> The various approximations that constitute our current physics theories are successful because simple mathematical structures can provide good approximations of how a [self-aware substructure] will perceive more complex mathematical structures. In other words, our successful theories are not mathematics approximating physics, but mathematics approximating mathematics!
>
> — *Max Tegmark* in *"Is 'the theory of everything' merely the ultimate ensemble theory?"* (1998)

### Why the Laws are Simple

In the 2nd century, Ptolemy wrote, "We consider it a good principle to explain the phenomena by the simplest hypothesis possible."

This rule of thumb is called the *law of parsimony* or *Occam's razor*.

It is the idea that in science, the simplest answer that fits the facts is usually right. Occam's razor is no doubt a useful and effective rule, but until recently no one understood *why* it works.

A few of the great equations in physics. What is striking is their simplicity.

Deep truths of nature can be expressed by short formulas, like $F = ma$ and $E = mc^2$. Physical equations rarely involve more than a few terms, rather than dozens or hundreds.

Physicists are awestruck by this simplicity. Einstein remarked, "The eternal mystery of the world is its comprehensibility."

Given there are far more ways for these formulas to be more complex, it's especially odd that they should be so simple.

> Compared with simple laws, there is a far greater range of complicated laws. […] We would have some reason to believe that there are at least two partial Selectors: being law-governed and having simple laws.
>
> *— Derek Parfit in "Why Anything? Why This?" (2008)*

> But the lesson is that at present the idea that the ultimate laws are as simple as possible is a hope, not something suggested by the evidence. Moreover, the prospect still faces the challenge of explanatory regression, as one would [be] left to explain why the underlying laws should be so simple.
>
> *— Sean Carroll in "Why Is There Something, Rather Than Nothing?" (2018)*

The mystery of simple comprehensible laws can now be answered.

We have found a *selector* that preferentially selects universes with simple laws. Algorithmic information theory tells us that for each bit saved in a program's description, its occurrences double.

This adds up fast. A program that's 30 bits shorter, say 120-bits vs. 150-bits occurs $2^{30}$ — *or over 1 billion* — times more often.

Ray Solomonoff, the father of algorithmic information theory, was the first to draw a connection between AIT and Occam's razor.

> On a direct intuitive level, the high a priori probability assigned to a sequence with a short description corresponds to one possible interpretation of "Occam's Razor."
>
> *— Ray Solomonoff in "A Formal Theory of Inductive Inference" (1964)*

When Müller applied algorithmic information theory to observer states, he found that it led to the prediction of simple physical laws.

> Observers will, with high probability, see an external world that is governed by *simple*, *computable*, *probabilistic* laws.
>
> *— Markus Müller in "Law without law: from observer states to physics via algorithmic information theory" (2020)*

### Why the Laws are Life-Friendly

One of the most surprising discoveries in physics of the past 50 years was the discovery that the laws of physics and constants of nature appear specially selected to allow complexity and life to arise.

Wheeler wrote, "A life-giving factor lies at the centre of the whole machinery and design of the world."

Why are the laws of physics suited to the emergence of complexity and life?

That the constants of nature, the strengths of the forces, the particle masses, etc., are just right to permit complex structures to arise is mysterious. Why are the laws this way? Why are they life friendly?

Physicists ask, why does the universe appear *fine-tuned*?

> As we look out into the universe and identify the many accidents of physics and astronomy that have worked together to our benefit, it almost seems as if the universe must in some sense have known we were coming.
>
> *— Freeman Dyson* in *"Energy in the Universe"* (1971)

> The fine tunings, how fine-tuned are they? Most of them are 1% sort of things. In other words, if things are 1% different, everything gets bad. And the physicist could say maybe those are just luck. On the other hand, this cosmological constant is tuned to one part in $10^{120}$ — a hundred and twenty decimal places. Nobody thinks that's accidental. That is not a reasonable idea — that something is tuned to 120 decimal places just by accident. That's the most extreme example of fine-tuning.
>
> *— Leonard Susskind* in *"What We Still Don't Know: Are We Real?"* (2004)

The first step in explaining fine-tuning is to recognize that for any universe to be perceived, requires that it be populated with conscious observers. This reasoning is known as the *anthropic principle*.

The next step is to explain why any universe exists that supports conscious observers. Typical answers are that the universe was either designed or it is just one among a vast set of mostly dead universes.

> We imagine our universe to be unique, but it is one of an immense number—perhaps an infinite number—of equally valid, equally independent, equally isolated universes. There will be life in some, and not in others.
>
> *— Carl Sagan* in *"Pale Blue Dot"* (1994)

The existence of infinite computational histories, guarantees that some will be of a type that can support life. Moreover, algorithmic information theory tells us the resulting physics should be maximally simple while respecting the constraint of being *life-friendly*.

> In this paper I show why, in an ensemble theory of the universe, we should be inhabiting one of the elements of that ensemble with least information content that satisfies the anthropic principle. This explains the effectiveness of aesthetic principles such as Occam's razor in predicting usefulness of scientific theories.
>
> *— Russell Standish* in *"Why Occam's Razor"* (2004)

And indeed, this is what we find when we examine our physics:

> A very interesting question to me is: is the universe more complicated than it needs to be to have us here? In other words, is there anything in the universe which is just here to amuse physicists?
>
> It's happened again and again that there was something which seemed like it was just a frivolity like that, where later we've realized that in fact, "No, if it weren't for that little thing we wouldn't be here."
>
> I'm not convinced actually that we have anything in this universe which is completely unnecessary to life.
>
> *— Max Tegmark in "What We Still Don't Know: Why Are We Here" (2004)*

(See: "*Is the universe fine-tuned?*")

### Why Quantum Mechanics?

Quantum mechanics is a cornerstone theory of modern physics. It's among the most thoroughly tested of all theories in science, and it's given us the most accurate predictions in all of physics.

But quantum mechanics is incredibly strange.

It suggests the existence of many (infinite) histories (i.e. many-worlds or many-minds). Observation or measurement appears to cause the infinite set of possibilities to "*collapse*" to just one of the possibilities, and the selected result is absolutely unpredictable.

According to quantum mechanics, no one can predict whether a photon will be reflected by or transmitted through a piece of glass, *not even in principle*. It's fundamentally random. Image Credit: Wikipedia

Quantum mechanics includes apparent absurdities, like unobserved cats being simultaneously alive and dead, non-local faster-than-light influences, and unlimited computation underlying physical reality.

> I have never been able to let go of questions like: How come existence? How come the quantum?
>
> *— John Archibald Wheeler in "Geons, Black Holes, and Quantum Foam" (1998)*

Of the mysteries in physics, "*How come the quantum?*", ranks highly:

Niels Bohr said, "Those who are not shocked when they first come across quantum theory cannot possibly have understood it." Werner Heisenberg admits, "I repeated to myself again and again the question: Can nature possibly be so absurd as it seemed to us in these atomic experiments?" And Richard Feynman said, "I think I can safely say that nobody understands quantum mechanics."

Wheeler thought if an ultimate theory could explain quantum mechanics, it would be a sure sign the theory was on the right track.

> The most important test is whether it gives anything like quantum mechanics. If it does, we have a go-ahead sign, if not, we have to revise our thinking.
>
> *— John Archibald Wheeler quoted in "Trespassing on Einstein's Lawn" (2014)*

Marchal's 1998 thesis, *Computability, Physics and Cognition*, gave the first hints that features of quantum mechanics, such as indeterminism, the many *parallel histories*, the *non-clonability* of matter, and *quantum logic*, could be explained as a consequence of computationalism.

> As in quantum mechanics, computationalism highlights a strong indeterminism, as well as a form of non-locality. […] Computationalism entails the existence of a phenomenology of many-worlds or parallel states.
>
> *— Bruno Marchal translated from "Computability, Physics and Cognition" (1998)*

Marchal writes, "The quantum empirical clues happen to be serious hints that the physical emerges from an internally defined statistics on the numbers dreams or computations *seen from inside*."

Standish went further. In a 2004 paper and in his 2006 book, he showed one could derive the basic rules, or *postulates*, of quantum mechanics, including the Schrödinger equation, purely from basic assumptions about observation within an infinite set of possibilities.

> The explanation of quantum mechanics as describing the process of observation within a plenitude of possibilities is for me the pinnacle of achievement of the paradigm discussed in this book. I can now say that I *understand* quantum mechanics. […]
>
> So when I say I understand quantum mechanics, I mean that I know that the first three postulates are directly consequences of us being observers. Quantum mechanics is simply a theory of observation!
>
> *— Russell Standish in "Theory of Nothing" (2006)*

### Irreducible Randomness

One of the strangest features of quantum mechanics is the presence of irreducible randomness that creates absolute unpredictability.

Compounding this strangeness is the fact that the equations of quantum mechanics are entirely deterministic. And yet, when a measurement is made, it seems the universe momentarily stops following these equations to randomly select one possibility to *make real*, from among the many possibilities present in the equations.

This was a pill too hard for Einstein to swallow. He declared, "God doesn't play dice with the world." And in the end he never accepted it.

The single-electron double-slit experiment, was voted the *most beautiful experiment in physics*.
Image Credit: A. Tonomura, J. Endo, T. Matsuda, and T. Kawasaki

In the *single-electron double-slit experiment*, an *electron* is put into a *superposition* — where the electron exists in multiple locations at once.

Then it's location is measured.

But when we measure the electron's location, it will appear in only one location, seemingly at random. Before measurement, it's impossible, *even in theory*, to predict where the electron will be.

If we inhabit a computational reality why do we see any randomness or unpredictability? Computations are perfectly predictable. Might this observation of randomness give us cause to doubt or rule out our being in a computational reality?

The opposite is true. The existence of an infinite computational reality explains why we encounter absolute unpredictability.

If only one computational history existed, observing randomness would be cause to dismiss the theory. But here there are infinite computational histories. Some of these histories will be similar to each other, some, so similar as to be almost indistinguishable.

Since there are infinite computational histories, each observer's mind state can be found within infinite parallel computational histories.

In a 1988 conference and in a 1991 paper, *Mechanism and Personal Identity*, Marchal explained how the appearance of randomness emerges from multiple instantiations of a single observer's mind.

He calls the phenomenon *first-person indeterminacy*.

> To predict the first person observable outcome of *any* physical experiment, you have to assume that your current computational state will not be obtained in some other part of the universe, or the multiverse, with different output for your experience.
>
> *— Bruno Marchal* in *"The computationalist reformulation of the mind-body problem"* (2013)

In summary: no brain that belongs to multiple distinct universes, or computational histories, can ever be sure what it will see next.

Multiple parallel histories contain identical instances of the same observer's mind state (or brain). A fundamental unpredictability and randomness will result from the observer's inability to determine which universe she's a part of, as she exists in all of them.

> It is impossible for any observer to deduce with certainty on the basis of her observations and memory which world she is a part of. That is, there are always many different worlds for which being contained in them is compatible with everything she knows, but which imply different predictions for future observations.
>
> *— Markus Müller in "Could the physical world be emergent instead of fundamental, and why should we ask?" (2017)*

So even in a fully deterministic reality, the existence of infinite histories makes the appearance of randomness inevitable.

The physicist shining a photon at a piece of glass is in an infinity of histories where the photon will reflect, and is in an infinity of histories where the photon will pass through. The physicist can't tell which until after the experiment is performed and she learns the result.

Ultimately, randomness stems from our inability to self-locate within the infinite sea of indistinguishable computational histories.

Tegmark notes how randomness appears in deterministic processes:

> It gradually hit me that this illusion of randomness business really wasn't specific to quantum mechanics at all. Suppose that some future technology allows you to be cloned while you're sleeping, and that your two copies are placed in rooms numbered 0 and 1. When they wake up, they'll both feel that the room number they read is completely unpredictable and random.
>
> *— Max Tegmark in "Our Mathematical Universe" (2014)*

Einstein is vindicated. God doesn't play dice with the world. But perhaps, not even God can predict what universe you will find yourself in once you perform a measurement that *splits yourself*.

(See: "*Does everything that can happen, actually happen?*")

### Infinite Complexity

In 1948, Richard Feynman developed the *path integral formulation*, which provided a new way to understand quantum mechanics.

Feynman showed that you get the same results quantum mechanics predicts by taking into account and adding up every one of the infinite combinations of possible particle paths and interactions.

It was bizarre, but it worked. And this new formulation provided key insights that helped develop *quantum electrodynamics* (or QED). In 1965, Feynman, together with Sin-Itiro Tomonaga and Julian Schwinger shared the 1965 Nobel Prize in physics for developing QED.

But why adding up all of these infinite possibilities gave the right answers presented a great puzzle, which bothered Feynman.

> It always bothers me that, according to the laws as we understand them today, it takes a computing machine an infinite number of logical operations to figure out what goes on in no matter how tiny a region of space, and no matter how tiny a region of time. How can all that be going on in that tiny space? Why should it take an infinite amount of logic to figure out what one tiny piece of space/time is going to do?
>
> *— Richard Feynman in "The Character of Physical Law" (1965)*

Under quantum mechanics, an infinite number of things happen behind the scenes. The smaller the scales you look, the more seems to be happening, with no bottom in sight.

The appearance of infinite happenings, infinite computations and infinite logical operations underlying physical reality is mysterious.

Perhaps the simplest answer for why reality appears this way is, "It appears this way because that is the way reality is."

If infinite computational histories form the foundation of reality, then infinities in physics might just be a reflection of this reality.

> In short, within each universe all observable quantities are discrete, but the multiverse as a whole is a continuum. When the equations of quantum theory describe a continuous but not-directly-observable transition between two values of a discrete quantity, what they are telling us is that the transition does not take place entirely within one universe. So perhaps the price of continuous motion is not an infinity of consecutive actions, but an infinity of concurrent actions taking place across the multiverse.
>
> *— David Deutsch in "The Discrete and the Continuous" (2001)*

> Matter is only what seems to emerge at infinity from a first person plural point of view (defined by sharing the computations which are infinitely multiplied in the [Universal Dovetailer's] work) when persons look at themselves and their environment below their substitution level. The non-cloning results from the fact that such a matter emerges only from an infinity of distinct computations.
>
> *— Bruno Marchal in "The computationalist reformulation of the mind-body problem" (2013)*

### Quantum Computers

Richard Feynman and David Deutsch are the two fathers of the quantum computer. Feynman proposed their possibility in 1982 and in 1985, Deutsch described how to build one.

These computers exploit the unlimited complexity inherent in quantum mechanics to build computers of incredible power.

How quantum computers do what they do is puzzling.

Each qubit added to a quantum computer doubles its power. A quantum computer with 300 qubits can simultaneously process $2^{300}$ states. This number of states exceeds the $2^{265}$ atoms in the observable universe.

How could a tabletop device process more states than there are atoms? How could it solve problems that no conventional computer could solve in the lifetime of the universe, even if all matter and energy in the observable universe were recruited for that purpose?

Some found the abilities of these computers so incredible, they concluded quantum computers simply weren't possible. After all, where exactly would all that computation be occurring?

Deutsch and Tegmark offer some answers.

> Since the Universe as we see it lacks the computational resources to do the calculations, where are they being done? It can only be in other universes. Quantum computers share information with huge numbers of versions of themselves throughout the multiverse.
>
> *— David Deutsch in "Taming the Multiverse" (2001)*

Given engineering challenges, for decades quantum computers remained only theoretical. Today, quantum computers are a reality.

In 2019, engineers at Google reported that their 53-qubit quantum computer solved in 200 seconds a problem that would take the world's most powerful supercomputer 10,000 years.

*Quantum computers* speed up computations by exploiting the parallelism of the multiverse. Image Credit: IBM Research

Today, anyone can sign up for free to program and use IBM's quantum computers over the internet.

What makes quantum computers difficult to build, is that to work, they must be completely isolated from the environment — such that they are not measured by anyone or anything until it finishes its work.

By isolating the quantum computer from the environment, observers temporarily make their existence compatible with all the possible states the quantum computer might simultaneously be in.

The parallel computations performed by quantum computers can then be explained by the work of parallel computational histories.

> If current efforts to build quantum computers succeed, they will provide further evidence for [the quantum multiverse], as they would, in essence, be exploiting the parallelism of the [quantum] multiverse for parallel computation.
>
> *— Max Tegmark in "Parallel Universes" (2003)*

(See: "*How do quantum computers work?*")

### Why Time?

The universe, our lives, and even our thoughts are inextricably linked with the march of time. Few things are as familiar to us as time, and yet time remains little understood. (See: "*What is time?*")

2,500 years ago, Heraclitus recognized change to be the only constant in life, saying, "All entities move and nothing remains still." But it doesn't seem logically necessary for a universe to have time.

> Mathematical structures are eternal and unchanging: they don't exist in space and time—rather, space and time exist in (some of) them. If cosmic history were a movie, then the mathematical structure would be the entire DVD.
>
> *— Max Tegmark in "Our Mathematical Universe" (2014)*

Why should our universe have a property like time?

The mysterious nature of time captures our imaginations. Salvador Dalí depicts clocks melting in "The Persistence of Memory" (1931)

All computers process information in an ordered sequence of steps. This ordering defines a notion of time that exists for any computation.

> A Turing machine requires time to separate the sequence of states it occupies as it performs a computation.
>
> *— Russell Standish in "Why Occam's Razor" (2004)*

Müller further showed that with algorithmic information theory, we can predict the appearance of a universe that evolves in time.

> Our theory predicts that observers should indeed expect to see two facts which are features of our physics as we know it: first, the fact that the observer seems to be part of an external world that evolves in time (a 'universe'), and second, that this external world seems to have had an absolute beginning in the past (the 'Big Bang').
>
> *— Markus Müller in "Could the physical world be emergent instead of fundamental, and why should we ask?" (2017)*

Assuming we are part of an unfolding computation, then we should expect to find ourselves in a universe with time.

### A Beginning in Time

Current evidence suggests our universe has a beginning.

But why should it?

Until the middle of the 20th century, most scientists believed the universe was infinitely old, without a beginning. They considered theories of an abrupt creation event to be inelegant.

Accordingly, scientists resisted the idea of a beginning until overwhelming evidence came out in its favor. It wasn't until we could *actually see* the afterglow of the big bang, in the form of *microwaves*, that scientists were convinced the universe began a finite time ago.

The history of the universe began some 13.8 billion years ago. Image Credit: NASA.

We call this point *the beginning* because in tracing the history of the universe backwards, we hit a point where predicting earlier states breaks down and further backwards tracing becomes impossible.

The physics either stops providing sensible answers, or we run into an explosion of possibilities and can't tell which of them is real.

The theory of *cosmic inflation*, gives an account of what caused the hot, dense, early phase of the universe. (See: "*What caused the big bang?*")

But inflation makes further backwards prediction (or *retrodiction*) impossible. It wipes its footprints with a set of infinite *prehistories*.

> Since our own pocket universe would be equally likely to lie anywhere on the infinite tree of universes produced by eternal inflation, we would expect to find ourselves arbitrarily far from the beginning. The infinite inflating network would presumably approach some kind of a steady state, losing all memory of how it started, so the statistical predictions for our universe would be determined by the properties of this steady state configuration, independent of hypotheses about the ultimate beginning.
>
> *— Alan Guth in "Eternal Inflation: Implications" (2013)*

Müller shows that algorithmic information theory predicts most observers will find themselves in a universe with simple initial conditions and an absolute beginning in time.

He explains this reasoning for a hypothetical observer named Abby:

> If she continues computing backwards to retrodict earlier and earlier states of her universe, she will typically find simpler and more "compact" states, with measures of entropy or algorithmic complexity decreasing — simply because she is looking at earlier and earlier stages of an unfolding computation.
>
> At some point, Abby will necessarily arrive at the state that corresponds to the initial state of the graph machine's computation, where simplicity and compactness are maximal. At this point, two cases are possible: either Abby's method of

> computing backwards will cease to work; or Abby will retrodict a fictitious sequence of 'states before the initial state', typically with increasing complexity backwards in time.
>
> *— Markus Müller* in *"Law without law: from observer states to physics via algorithmic information theory"* (2018)

This mirrors what cosmic inflation does for our universe.

In an alternate history where humans developed *algorithmic information theory* before *microwave telescopes*, we might have predicted a beginning of the universe before telescopic evidence came in.

### Information as Fundamental

Physicists are increasingly recognizing that information plays a fundamental role in physics.

Scientists have long understood that matter and energy can be neither created nor destroyed. They are, in all interactions, *conserved*.

But only recently have physicists realized the same is true for information. Physical information can neither be copied nor deleted. There is an equivalent law for the *conservation of information*.

This discovery stemmed from the *black hole information paradox*.

The supermassive black hole at the center of Galaxy M87. Image Credit: Event Horizon Telescope

According to general relativity, dropping something into a black hole destroys its information, like an *ultimate furnace*. But according to quantum mechanics, information can't be destroyed. At best, a black hole can only rearrange information, like an *ultimate shredder*.

In 1981, this paradox sparked the "*black hole war*" — waged by two camps of physicists. After decades of debate, the black hole war settled in favor of quantum mechanics.

Information can't be destroyed, not even by a black hole. Physicists now understand a kind of *mass-energy-information equivalence*.

There is also an equivalence between entropy in thermodynamics and entropy in information theory. And constants of nature are closely linked to the ultimate physical limits of computational speed, efficiency and storage density. (See: "*How good can technology get?*")

Why is the link between physics and information so tight?

Wheeler dedicated his life to the pursuit of fundamental questions. Ultimately, he reached the conclusion that *everything is information*.

> It from bit symbolizes the idea that every item of the physical world has at bottom — a very deep bottom, in most instances — an immaterial source and explanation; that which we call reality arises in the last analysis from the posing of yes-no questions and the registering of equipment-evoked responses; in short, that all things physical are information-theoretic in origin.
>
> *— John Archibald Wheeler in "Information, Physics, Quantum: The Search for Links" (1989)*

> Now I am in the grip of a new vision, that Everything is Information. The more I have pondered the mystery of the quantum and our strange ability to comprehend this world in which we live, the more I see possible fundamental roles for logic and information as the bedrock of physical theory.
>
> *— John Archibald Wheeler in "Geons, Black Holes, and Quantum Foam" (1998)*

Does *information* somehow form the bedrock of reality?

Why is information fundamental? The answer is easy if reality is computational. Information lies at the heart of computation.

In the end, all that computers do is process information. So to say, "*computation* is the foundation of reality," is another way of saying, "*information processing* is the foundation of reality."

> The burgeoning field of computer science has shifted our view of the physical world from that of a collection of interacting material particles to one of a seething network of information.
>
> *— Paul Davies* in *"The flexi-laws of physics"* (2007)

> What we can learn from these reconstructions is that a few simple and intuitive constraints on *encoding and processing of information* will automatically lead to (aspects of) the Hilbert space formalism of quantum theory.
>
> *— Markus Müller* in *"Law without law: from observer states to physics via algorithmic information theory"* (2019)

### Observation as Fundamental

Observation also appears to have a fundamental role in reality.

> The universe and the observer exist as a pair. […] The moment you say that the universe exists without any observers, I cannot make any sense out of that. You need an observer who looks at the universe. In the absence of observers, our universe is dead.
>
> *— Andre Linde* in *"Does the Universe Exist if We're Not Looking?"* (2002)

Quantum mechanics revealed that observation somehow forces reality to *choose* from among many possibilities.

More recently, physicists have speculated that the observer's power to force reality's hand applies not only to the here and now, but perhaps all the way back to the beginning of the universe.

> We are participators in bringing into being not only the near and here but the far away and long ago. We are in this sense, participators in bringing about something of the universe in the distant past.
>
> *— John Archibald Wheeler* in *"The anthropic universe"* (2006)

> The top down approach we have described leads to a profoundly different view of cosmology, and the relation between cause and effect. Top down cosmology is a framework in which one essentially traces the histories backwards, from a spacelike surface at the present time. The no boundary histories of the universe thus depend on what is being observed, contrary to the usual idea that the universe has a unique, observer independent history. In some sense no boundary initial conditions represent a sum over all possible initial states.
>
> *— Stephen Hawking and Thomas Hertog in "Populating the landscape: A top-down approach" (2006)*

The observer might even, in some sense, choose the *laws of physics*.

> It is an attempt to explain the Goldilocks factor by appealing to cosmic self-consistency: the bio-friendly universe explains life even as life explains the bio-friendly universe. […] Cosmic bio-friendliness is therefore the result of a sort of quantum post-selection effect extended to the very laws of physics themselves.
>
> *— Paul Davies in "The flexi-laws of physics" (2007)*

Can there be a universe if there is no one to call it home? Do observations themselves somehow define the histories and laws of the universes containing them?

Observation and its relation to observed reality is an enigma.

Wheeler believed the relation between them was our best clue to finding an answer to why there is something rather than nothing.

> « Omnibus ex nihil ducendis sufficit unum », Leibniz told us; for producing everything out of nothing one principle is enough. Of all principles that might meet this requirement of Leibniz nothing stands out more strikingly in this era of the quantum than the necessity to draw a line between the observer-participator and the system under view. […] The necessity for that line of separation is the most mysterious feature of the quantum. We take that demarcation as being, if not the central principle, the clue to the central principle in constructing out of nothing everything.
>
> *— John Archibald Wheeler* in *"Quantum Theory and Measurement" (1983)*

In the view that all computational histories exist, observation does play a role in selecting both histories and physical laws.

It is a tautology that observers only find themselves in computational histories capable of producing their observations.

Since every imaginable program exists, implementing every imaginable set of laws, then in a very real sense, the observer does force reality to select both the laws and history they observe.

> To derive the effective laws of physics, one needs to do statistics over the ensemble of identical observers. This involves performing summations over the multiverse, but these summations are with a constraint that says that some given observer is present.
>
> *— Saibal Mitra* in *discussion list (2018)*

It's curious that Buddhist thinkers reached similar conclusions about observers well ahead of modern physicists.

> The Buddhist does not believe in an independent or separately existing external world, into whose dynamic forces he could insert himself. The external world and his inner world are for him only two sides of the same fabric, in which the threads of all forces and of all events, of all forms of consciousness and their objects, are woven into an inseparable net of endless, mutually conditioned relations.
>
> *— Anagarika Govinda* in *"Foundations of Tibetan Mysticism" (1969)*

## Reviewing the Evidence

We have found evidence in support of this theory. The existence of infinite computational histories predicts many features of reality.

It predicts a universe of inviolable, but simple, mathematical, and life-friendly laws. It predicts a multiverse of parallel histories, infinite computational complexity, and a fundamental unpredictability, as we find in quantum mechanics.

The theory predicts a universe that evolves in time, has simple initial conditions, and a point that we can't retrodict beyond: a beginning. Further, it predicts information and observation are fundamental.

So far, *all* of these predictions are confirmed by current physical and cosmological observations. For the first time in history, humanity has an answer to *why we exist* that is backed by physical evidence.

## Conclusions

Given the observational evidence, we have reason to suspect that this theory, or something close to it, is correct.

It implies: *We live within the total set of all computations.*

Moreover, we have traced the existence of this set to something that's a strong candidate for having necessary existence: self-existent truths concerning numbers and their relations.

> One option, following Leibniz and others, is that we reach a level at which further explanation is not required, because something is necessarily true.
>
> *— Sean Carroll in "Why Is There Something, Rather Than Nothing?" (2018)*

This truth not only seems *causeless*, but because from it we can deduce much of physics, it is also a candidate for being the *cause*.

> The supreme task of the physicist is the discovery of the most general elementary laws from which the world-picture can be deduced logically.
>
> *— Max Planck in "Where is science going?" (1932)*

Under this theory, the most general laws from which we can deduce the world-picture become the laws of arithmetic. Thus, arithmetic, as a theory of arithmetical truth, becomes a *theory of everything*.

This brings a whole new meaning to Leopold Kronecker's edict: "God made the integers, all else is the work of man."

> This is why, with Church's thesis, and the quantum confirmation of mechanism, intuitive arithmetic, a.k.a. number theory and its intensional variants, may well be the simplest and richest "theory of everything" that we can have at our disposal.
>
> *— Bruno Marchal translated from "Computability, Physics and Cognition" (1998)*

This theory — *arithmetic* — has been under our noses the whole time!

> Behind it all is surely an idea so simple, so beautiful, so compelling, that when—in a decade, a century, or a millennium—we grasp it, we will all say to each other, how could it have been otherwise? How could we have been so stupid for so long?
>
> *— John Archibald Wheeler in "How Come the Quantum?" (1986)*

## The Journey Here

It's been a long road to reach the point where humanity can scientifically address the question: "Why does anything exist?"

Humans have walked the earth for some 500,000 years. But only in the last 1% of that time, or the past 5,000 years, have we had writing. Only in the last 0.1% of that time, or the past 500 years, have we had the scientific method. And only in the past 0.01% of that time, or the past 50 years, has humanity known about universal equations.

To get an answer to our question, required that humans discover numbers, equations, computation, and wrestle with topics at the foundation of mathematics, including consistency, completeness, and decidability. In the end, this led to our discovery of universal equations that define all computation.

To find evidence linking this computational reality to physics, humans had to discover the expanding universe and gather evidence of the big bang. We also had to probe the smallest scales and through careful study of particles, discover the quantum nature of reality.

A century ago, we had none of this understanding.

### A Strange Answer

We can't help but notice how strange this answer is.

But perhaps we should have expected this. Would we expect that the final answer to the greatest mystery of the cosmos would be *ordinary*?

> Now, my own suspicion is that the universe is not only queerer than we suppose, but queerer than we *can* suppose.
>
> *— J. B. S. Haldane in “Possible Worlds and Other Essays” (1927)*

> Whatever may be the truth about the universe, it is bound to be astonishing.
>
> *— Bertrand Russell*

> We will first understand how simple the universe is when we recognize how strange it is.
>
> *— John Archibald Wheeler in “Geons, Black Holes, and Quantum Foam” (1998)*

Tegmark cautions against rejecting theories just for being weird. And admits he would be disappointed if the answer weren’t a bit weird.

> It’s very important for us physicists to not dismiss ideas just because they are weird, because if we did we would have already dismissed atoms, black holes, and all sorts of other marvelous things. And actually, you know when you ask a basic question about the nature of reality, you know, don’t you expect an answer which is a bit weird? I think anything but weird would be a big letdown.
>
> *— Max Tegmark in “What We Still Don’t Know: Are We Real?” (2004)*

### A Triumph of Human Reason

> I believe when the history of science is written, then what’s being discovered about our universe in the last decade or two will be one of the most exciting chapters.
>
> *— Martin Rees in “What We Still Don’t Know: Are We Real?” (2004)*

We now have viable answers to great questions of existence:

- Leibniz’s question: Why is there something rather than nothing?
- Einstein’s question: Why is the universe so comprehensible?
- Wigner’s question: Why is the universe so mathematical?
- Wheeler’s question: How come the quantum?
- Smolin’s question: Why these laws and not others?
- Feynman’s question: Why does infinite logic underlie physics?
- Hawking’s question: What breathes fire into the equations?

It required us to assume *math*, rather than *matter*, is fundamental. Given the evidence supporting this view, we might consider the 2,400-year-old debate between Plato and Aristotle as settled.

> If we do discover a complete theory, it should in time be understandable in broad principle by everyone, not just a few scientists. Then we shall all, philosophers, scientists, and just ordinary people, be able to take part in the discussion of the question of why it is that we and the universe exist. If we find the answer to that, it would be the ultimate triumph of human reason — for then we should know the mind of God.
>
> *— Stephen Hawking* in *"A Brief History of Time"* (1988)

Hawking believed if we could discover *what breathes fire into the equations*, then we *should know the mind of God*.

But do we? By postulating infinite, eternal, mathematical truth as the ultimate explanation, and the cause and source of reality, have we succeeded in explaining God, or have we explained God away?

## Open Questions

While this theory provides answers to many questions, it does not answer everything, and much additional work is required.

### Room for God

This theory provides a purely natural and rational account for why anything exists. Is there any room for God in this picture?

We now have a view of reality where everything emerges from absolute truth. This infinite truth embodies all knowledge. Being a container of all knowledge, as well as all minds and things, can we compare this infinite set of truth to an omniscient mind?

This truth is infinite and incomprehensible, eternal and indestructible, without a beginning or end. It is uncreated and self-existent. It is transcendent, immaterial, immanent, and indivisible. It's the reason and cause behind all things. It serves as the creator, source, and ground of being, supporting us and the material universe.

Does this infinite truth or '*omniscient mind*' lead to the existence of God? Might it even be God? It's not a simple question.

But knowing why anything exists, leaves us in a better position to answer questions about what exists and what doesn't.

(See: "*Does God Exist?*")

### Deriving Physical Law

How much of physical law can we derive from the assumption of all computations together with the requirement of life-friendliness?

Can we predict things like types of particles and forces, or the dimensionality of *spacetime*? Might we even be able to predict values of constants like particle masses and force strengths?

> What really interests me is whether God could have created the world any differently; in other words, whether the requirement of logical simplicity admits a margin of freedom.
>
> *— Albert Einstein*

It remains to be seen how much of physical law is *universal* (applying to all observers in all computational histories), and how much is *geographical* (depending on which histories an observer belongs to.

> As a theoretical physicist, I would like to see us able to make precise predictions, not vague statements that certain constants have to be in a range that is more or less favorable to life. I hope that string theory really will provide a basis for a final theory and that this theory will turn out to have enough predictive power to be able to prescribe values for all the constants of nature including the cosmological constant. We shall see.
>
> *— Steven Weinberg in "Dreams of a Final Theory" (1992)*

But this hope, of deriving every aspect of physics, is waning.

Max Tegmark recounts, "as recently as 1997, the famous string theorist Ed Witten told me that he thought string theory would one day predict how many times lighter an electron is than a proton. Yet when I last saw him at Andrei Linde's sixtieth birthday party [in 2008], he confessed after some wine that he'd given up on ever predicting all the constants of nature."

## Implications

If all computations exist, and if those computations explain our observed reality, it leads to many surprising implications.

### The Universe is a Dream

The theory lends support to the ancient idea, expressed by Taoist, Greek, and Christian philosophers, and a tenet of Hindu and Buddhist belief: that the material universe is a kind of *dream* or *illusion*.

It implies that the material and physical are *byproducts of mind*.

> Collective karmic impressions, accumulated individually, are at the origin of the creation of a world. […] The outside world appears as a result of the acts of sentient beings who use this world. […] The "creator of the world," basically is the mind.
>
> *— The 14th Dalai Lama in "Beyond Dogma" (1994)*

> For the things which one thinks are most real, are the least real.
>
> — *Plotinus in "The Enneads V.5.11" (270 A.D.)*

Only recently have modern scientists begun to embrace this view, with a few even doubting the "realness" of physical existence.

Neils Bohr said, "Everything we call real is made of things that cannot be regarded as real." In an interview, Marvin Minsky admitted, "We don't know that we exist because […] maybe we're just what a program would do if the computer were turned on and it's not even running."

Marvin Minsky - Are There Things Not Material?

## We Live in a Simulation

The *simulation hypothesis* and *simulation argument* raise the question of whether or not we inhabit a vast computer simulation.

Cypher enjoys a simulated meal in *The Matrix* (1999)

If we exist as a consequence of mathematical truth, the simulation hypothesis is made true by default. For we would then find ourselves living within the infinite set of computationally generated histories.

This blurs the distinction between *virtual reality* and *real reality*.

In the beginning was the code: Juergen Schmidhuber at TEDxUHasselt

Juergen Schmidhuber presents what he calls the *Algorithmic Theory of Everything*: the idea that this universe, and all others, are contained in a short computer program.

It remains an open question: is anyone in control of the simulation we happen to be in? (See: "*Are we living in a computer simulation?*")

### Our Place in Reality

With an answer to why anything exists, we can orientate ourselves in reality. We now understand our position and place in it.

Mathematical truth implies the existence of all computations. The existence of all computations implies the existence of all observers. The existence of all observers leads to a quantum mechanical reality populated with all possibilities and ruled by simple laws.

So what exists? Almost everything.

Reality becomes so big and so comprehensive that it includes *everything* and *everyone* that can be. Every thought that can be had and every experience. Every story and scenario plays out, eventually and somewhere. Actually, they all recur an infinite number of times.

Indeed, in this view, reality is so large that it guarantees the existence of an afterlife. See ("*Is there life after death?*")

Mahā-Viṣhṇu dreaming in the great *Causal Ocean*. Image Credit: Krishna.com

> Confession: if I love [this theory], it is because it entails the existence of *many things* not “physically present”, notably those incredible deep universal dreamers which keep [losing] themselves in an incredible labyrinth of partially sharable dreams, meeting ladders and ladders of surprises, self-multiplying and self-fusing, and which are partially terrestrial and partially divine creatures.
>
> *— Bruno Marchal in discussion list (2011)*

Reasoned study of the mysteries of existence has brought us to a coherent theory of why there is something rather than nothing.

The best evidence suggests our universe is one among an infinite number of possible realms, with the full extent of reality being unbounded. The source of this reality is logical necessity, via infinite mathematical truths which are independent of any material universe.

We can count ourselves among the first generation of humans able to reason logically, with the support of observational evidence, to arrive at answers for why our universe has the laws it does, why we are here, and why there is something rather than nothing.

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**Published by Jason K. Resch**

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PREV
What is the meaning of life?

## 48 Replies to “Why does anything exist?”

**1Zer0**

March 10, 2021 at 12:58 pm

Interesting approach, yet I find the notion of the mind being turing-computable to be very questionable. Let’s suppose that’s true and we algorithmically simulate all the physical laws inside the brain. Now we got our “mind algorithm”, as every Turing-Machine can be represented by a large table, this would imply the “mind-algorithm” for a respective person to be executable on a mechanical calculator as long as its turing complete. But a mechanical calculator is just a large (possibly electromechanical) newtonian system with mechanical parts moving in order to execute calculations and writing the results on some storage medium. So if you give the turing complete mechanical calculator the table description of the mind, the only thing it does is moving its mechanical parts around inside. How is this supposed to somehow “spawn consciousness” between those mechanical components? What if I stop the machine for 1000 years and then continue execution? What if I stop the whole program and load something completely different into the mechanical computer to calculate, and later continue executing the table description of the mind algorithm? An absurdity indeed. It’s all just symbolic manipulation in a TM. Also, if all Qualia is the result of computation, there should be a way to precisely inject new qualia experiences into the mechanical computer such that that mind can experience something phenomenologically new – something that would not be possible in our observable universe, for example the mental image of an 22 dimensional space or a completely new category of qualia impression which is not visual, sound, flavour, feeling or taste. All these absurdities imply for me that consciousness is not related to turing computable processes – which doesn’t imply it to be undescribable by an axiomatic theory though.

LOG IN TO REPLY

**Jason K. Resch**

March 10, 2021 at 2:26 pm

Hi 1Zer0,

Your comment raises many interesting questions. I appreciate them!

To clarify: if minds cannot be produced by computations, then this theory fails as an explanation of reality. On the other hand, should this explanation of reality succeed (by giving predictions for physics that survive falsification), then the success of this explanation will give some indirect evidence in support of the theory that minds result from computations.

Whether the computational theory of mind will ultimately turn out to be true or false, I cannot say. But it is now testable.

I plan to have an article that will focus on theories of mind. It will address some of the issues you raise, such as Leibniz's Mill ( https://en.wikipedia.org/wiki/Leibniz%27s_gap ), and whether simulated entities can be aware of any pauses, reloads, or transfers of their mind algorithm between computers. Until then, you might like this paper, which addresses some of these questions: https://iridia.ulb.ac.be/~marchal/publications/SANE2004MARCHAL.pdf

You are correct, that if computationalism is true, then any conscious experience, possible in any universe with any laws, could be simulated right here in this universe. Though, I think rather than highlighting an absurdity, this points to the ultimate flexibility of Turing machines.

You are also correct that the behavior of Turing machines exceeds the bounds of any finite axiomatic theory to fully describe. For example, any axiomatized system can at best, prove only a finite number of the leading digits of Omega: https://en.wikipedia.org/wiki/Chaitin%27s_constant

I hope this comment is helpful. Please let me know should you have further questions.

LOG IN TO REPLY

**1Zer0**

March 12, 2021 at 12:02 pm

Even if all the physical laws in the observable universe would be turing computable, it would still not give a satisfying answer to the question how symbolic computation yields a conscious experience. You probably are already aware of the arguments regarding certain paradoxes which arise when the mind would simply be substrate independent and turing computable, I think Scott Aaronson nicely put them together here https://arxiv.org/pdf/1306.0159.pdf und the section "Mind Upload Who Cares?"
All the paradoxes could however be avoided when if I instead suppose that the human mind is not turing computable, but as Roger Penrose suggested Hypercomputation on Quantum Level might be involved.
Personally, while I am a platonist, I do not consider Turing Machines to be "ontologically important" – as in Turing himself defined them relative to the capabilities of a human mind and for a human the operational mode of a Turing Machine certainly appears to fit what we consider to be "mechanical". However, other forms of intelligent life might have completely different "mechanical operations" available, which may yield models of computation which we would consider to be hypercomputation. I am perfectly fine with including universes which can be axiomatically described, but have non computational properties. For example a possible world in which there exists fundamental objects like particles attracting each other but the law to determine the strength of attraction would require to solve the Zero Matrix Problem for 3*3 matrices. In the end, I do not believe Nature cares about

about being "mechanical" for the human mind.
Regarding the general question why anything exists at all, I do wonder whether the answer might be as unimaginable for a human as telling a blind person to describe the color red. The answer might not be approachable with formal tools alone, we simply may not have the necessary mental tools to grasp the answer at all.
Well, I am looking forward to your mind-article.

LOG IN TO REPLY

**Jason K. Resch**
March 12, 2021 at 12:52 pm

Hi 1Zer0,

Thanks for the link to Aaronson's Paper.

In my view the paradoxes/questions he raises in this section are not so much questions about consciousness, but questions of personal identity. The best treatment of theses issues that I have read are by Zuboff, in "Oneself: The Logic of Experience":
https://www.researchgate.net/publication/233329805_One_Self_The_Logic_of_Experience

I am planning an article on this topic as well, which I think will be under the title: "Why was I born as who I am?"

> Well, I am looking forward to your mind-article.

Thanks! I am now considering making "What is Consciousness?" the next article I publish. I will attempt to cover all the questions you raise in your comment.

LOG IN TO REPLY

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**Thinkertank**
March 12, 2021 at 5:55 am

If this theory is right, doesn't it render your solution to the meaning of life void? If everything happens, then surely nothing matters? If there are infinite versions of all of us doing every possible thing, then how can one aim to do good? All the negative outcomes are unavoidable in this model, so it seems quite pointless to pursue anything, since it already happens infinite times over?

LOG IN TO REPLY

**Jason K. Resch**
March 12, 2021 at 10:00 am

Hi Thinkertank,

That is a great question. While you are right that this theory implies everything happens, it is important to recognize that not everything happens with the same regularity or frequency.

Therefore, it still makes sense to do all the normal things that preserve life and happiness, and avoid pain. For example, you should still look both ways when you cross the street, eat when you are hungry, and seek treatment when you are ill.

These behaviors reduce the probability and duration of negative outcomes, and promote the probability or increase the duration of positive outcomes. Therefore, what we do, and the choices we make still matter in the pursuit of the good.

LOG IN TO REPLY

**Thinkertank**

March 12, 2021 at 1:48 pm

On first glance I grasp the core message of your response, but I am still not convinced; if every outcome happens infinitely, what does ‘frequency’ even mean?

How do you weigh infinite suffering versus infinite happiness? To me it seems incoherent.

If there is some sort of intrinsic meaning and inherent laws of existence that point us in the direction of a meaningful ‘good’ (versus ‘bad’) existence, why all of this excess suffering?

Through emergent physics; evolution, neurochemicals, evolutionary-psychology and behavioral psychology we can certainly start to differentiate ‘values’, but if we go with the maximalist platonism it all seems to crumble. Why do X over Y or Z if both values stretch to infinity? If that is the ultimate reality, every value between 0 and 1, no matter how ‘non-zero’, seem to converge towards equilibrium. If that is indeed the case then this entire discussion is merely one of those configurations, making the entire topic stochastic and nihilistic.

Sure, in the present moment *I* (whatever that really means in this theory) my brain is configured in a way that prefer certain states, but if all states are equal, neither can be preferred by existence itself.

LOG IN TO REPLY

**Jason K. Resch**

March 12, 2021 at 3:48 pm

Hi Thinkertank,

> if every outcome happens infinitely, what does ‘frequency’ even mean?

You are right that comparing relative infinities in a basic way can lead to absurd answers, but there are ways of dealing with infinities. For instance “measure theory”.

Measure theory allows us to do “frequency” calculations despite dealing with infinities. For example, consider a dart board (or some idealized version of one): it is an area containing infinite points. Likewise, the bull’s eye, while much smaller, also contains an infinite number of points.

Measure theory allows us to calculate the probability of a randomly thrown dart hitting the bull’s eye vs. somewhere else on the board, despite the fact that both contain infinite points. I believe measure theory allows us to do the same for infinities of potential conscious experiences as they appear in quantum theory or a total computational reality.

> Why all of this excess suffering?

We are still a ways off from mastering our environment, matter, energy, and experiences. I imagine that should technology bring us to such a point in the future, the amount of suffering present in the world will decrease rapidly.

> Why do X over Y or Z if both values stretch to infinity? / neither can be preferred by existence itself.

You are right that objective reality neither defines nor imposes any favoritism on the states. What is Good vs. Bad, emerges out of subjectivity (as consequences for conscious experiences). Conscious observers define for themselves what is good or bad, and to the degree they have control over their experiences, they can act to steer reality towards having more states that are good for them. (e.g. having full refrigerators instead of bare cupboards).

I intend to address more directly some of these questions in an upcoming article on “How good can technology get?”

LOG IN TO REPLY

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**Semih BULGUR**

March 17, 2021 at 11:48 am

Hello Jason, you are never tired. Huge article again. l dive bottom of knowledge sea and l am melting in the existing with your article. l have not finished reading yet, l am going on section by section. But l thank you in advance for this huge article!

LOG IN TO REPLY

**Jason K. Resch**

March 17, 2021 at 3:07 pm

Dear Semih,

Thank you for your kind words, I am glad you appreciate it! Also

note, that I have finished converting it to a video format, in case you prefer ingesting the article that way:
https://www.youtube.com/watch?v=6hGH-roVl3w

LOG IN TO REPLY

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**Glenn Turner**
June 7, 2021 at 12:21 am

Very interesting essay. You covered a heck of a lot of material. I also wrestle with questions about existence and consciousness. I posted a short essay on nothingness on my blog here:
https://creativity413282887.wordpress.com/2021/03/16/musings-in-metaphysics/
The topic of "substance" is ancient I believe.
I agree with Spinoza, there is a single substance and all things are modes of expression of it.

LOG IN TO REPLY

**Jason K. Resch**
June 7, 2021 at 6:15 am

Hi Glenn,

Thank you! I enjoyed your article on nothingness. I agree it seems inconsistent for something to come from nothing (assuming a pure nothing is even a consistent idea to begin with).

I am also partial to monism, as I think you and Spinoza advocate for. The important question then becomes what is the nature of this singular substance or thing?

My next article is on questions of consciousness. I hope you will like it.

LOG IN TO REPLY

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**bob**
July 21, 2021 at 3:15 pm

Love the article but let me give you a different perspective. Nothing is zero. Zero is a circle. There is a reason for that.

LOG IN TO REPLY

**Jason K. Resch**
July 22, 2021 at 10:09 am

Hi Bob, thank you for sharing your perspective. I think there is a connection between zero and infinity. Zero, like all numbers, possess infinite properties. Are these properties things? Could they lead to the appearances of things? It's possible this line of thinking could be the key to understanding why anything exists.

LOG IN TO REPLY

**Dharma Sri**

July 29, 2021 at 5:07 pm

……"Could they lead to the appearance of things?.."

Hear I suppose:
"they" = 'Math',
"things" = 'Mind' & 'body'.

LOG IN TO REPLY

**Jason K. Resch**

August 14, 2021 at 8:09 am

Hi Dharma,

Yes that is correct: By "They" I meant numbers, or true relations between numbers, or simply truth, and by "Things" I meant the material reality, or else the appearance or illusion of a material reality.

The question then would be: Can the material reality, or the appearance of a material reality be explained as a consequence of abstract entities like numbers, their relations, or truths concerning them?

LOG IN TO REPLY

**Dirk**

October 10, 2021 at 4:42 pm

I can't remember where I read this, but…
According to quantum mechanics the void has 10^123 times more energy than we observe (or something like that), leaving room for a simple hypothesis: the void/nothingness is unstable and we and the universe are the sparks flying off it…

LOG IN TO REPLY

**Jason K. Resch**

January 28, 2022 at 6:48 am

Hi Dirk,

That is basically the idea. But note that 'the void' here would then refer to the part of space that is still inflating exponentially rapidly — doubling in size many times per nanosecond, rather than the the much more slowly exponentially expanding space in the universe we can see — which doubles every many billion years. The energy density of empty space in our universe is ~10^123 times lower than what we would expect from quantum field theory, but it is exactly in the range necessary for life to exist. This is covered in the article "Is the universe fine-tuned?":

https://alwaysasking.com/is-the-universe-fine-tuned/

LOG IN TO REPLY

**Mikola**

October 15, 2021 at 10:20 am

You have written very important words that you can get answers to if you want.
But for this, requires big spiritual preparation. Earthly people were looking for answers, but without
help cannot find the answers to these questions. The human mind is a "forest monkey",
as they say in India, and mind can only ask these questions. The earthly mind cannot find
these answers because it cannot go beyond mind. It is impossible for humans.
There are answers to all questions, but they are never available to the earthly mind without help.

If you really want to have answers to all your questions, then you must have them. We will help
you and you will soon have these answers. People like you must know everything. It's good,
that you are a programmer and if you are a Christian, it will be easier for you to find out all
the answers, because you already have minimal spiritual literacy. You will be rewarded.
Mikola. neboraiiua@gmail.com

LOG IN TO REPLY

**Jason K. Resch**

January 28, 2022 at 6:52 am

Hi Mikola,

Thank you. I find it interesting that you drew a connection between spiritual literacy and being a programmer.

LOG IN TO REPLY

**Mikola**

January 28, 2022 at 12:29 pm

If you really want to have answers to all your questions, then you must have them. We will help
you and you will soon have these answers. People like you must know everything.

LOG IN TO REPLY

**James Palmer**

October 23, 2021 at 7:48 pm

I wrote this and copied from a few pages how inflation might of started.

A first implication of eternal inflation is that the probability for inflation to start – the question of how likely it is for an initial speck of repulsive-gravity material to form – becomes essentially irrelevant. Inflation only needs to begin once, in all of eternity. As long as the probability is nonzero, it does not seem relevant, and perhaps it is not even meaningful, to ask if the probability is large or small. If it is possible, then it will eventually happen, and when it does it produces literally an infinite number of universes. Unless one has in mind some competing process, which could also produce an infinite number of universes (or at least an infinite space-time volume), then the probability for inflation to start has no significance.

A second implication of Eternal inflation that if the multiverse began from such a quantum nucleation event, then what would be the cause? Many quantum mechanical processes do not require a cause. For example if you have a radioactive atom, you know that it will decay. But you cannot tell when. So there is a half life time, for example that you can tell that in a year the probability of this atom to decay is 50%. Then the year has passed, it did not decay. The probability for it to decay the next year is still 50%. Eventually it will decay. But if you asked why did it decay at that particular moment? This is no reason. There is no cause. So quantum mechanical processes like these are uncaused. And the spontaneous creation of the multiverse is of the same nature. It does not require any cause.

A third implication of eternal inflation that we would love to know where did the vert first seed of false vacuum come from. What triggered inflation? Amazing there is a speculative yet mathematically consistent theory that describes how an inflating sea could emerge what literally seems to be nothing a state containing no matter no space and no time. However this description is governed by the laws of physics. So the laws must somehow be there prior to the multiverse. If there is no space and time how and where are these laws encoded. This takes us far into the unknown.

Max Tegmark think he knows the answer. If we apply the same argument to whatever ever mechanism started inflation and ultimately produced our level 2 inflationary multiverse, we conclude that it probably produced many other level 2 inflationary multiverses that are completely disconnected. However this variant appears to be untestable since it would neither add any qualitatively different worlds nor alter the probability distribution for their properties all possible level 1 quilted multiverses are realised in each of these level 2 inflationary multiverses. He also says although we discussed in chapter 6 how inflation in a mathematical structure with it's single set of fundamental laws of physics give rise to different effective laws of in different parts of space forming a level 2 inflationary multiverse.

He finally says before moving on, let us briefly comment on a few closely related multiverse notions. First of all, if one Level II inflationary multiverse can exist, eternally self-reproducing in a fractal pattern, then there may well be infinitely many other Level II inflationary multiverses that are completely disconnected. However, this variant appears to be untestable, since it would neither add any qualitatively different worlds nor alter the probability distribution for their properties. All possible initial conditions and symmetry breakings are already realized within each one.

The mechanism that started inflation and created our level 2 inflationary multiverse has it always been creating level 2 inflationary multiverses forever before our inflating multiverse was created and will it continue to create level 2 inflationary multiverses forever? Has that mathematical structure that started inflation and produced our level 2 inflationary multiverse always been there forever?

Max Tegmark's says in the level 4 multiverse there are all different mathematical structures which have different fundamental equations of physics eg no quantum mechanics for example. Hawking said why these equation of physics not others.

Have all the methodical structures been there forever and have always been there?

If in this eternal inflationary multiverse you don't live again but another eternal inflationary multiverse you do live again then that is all that matters to live again.

I the reason why I have studied this that if I am going to live an infinite number of lives in the future but only a finite number of lives in the past. There is no balance I like the idea where there is no start no end no first life no last life t's balanced and consistent I don't like the idea of there is a start but no end there is a first life no last life because you haven't always lived every possible variation of your life over and over forever an d it is not balanced and not consistent. I think if something has a start it must have an end if it has no start it should have no end. I like things to be balanced and consistent

I got our mathematical universe book 2014 from Max Tegmark that is where some of my references are coming from.

LOG IN TO REPLY

**Jason K. Resch**
January 28, 2022 at 6:56 am

Hi James,

I greatly appreciate your summary and description of these ideas of inflation. Max Tegmark's book is very good, and his ideas were a great inspiration to me. I've bookmarked this post so that I can be sure to incorporate its many beautiful ideas into my article on inflation. Thank you!

LOG IN TO REPLY

**George Sellers**
December 13, 2021 at 2:04 pm

Hey James, could you elaborate some paragraphs about the existence of post-physical lifeforms (post-physical aliens, gods and spiritual beings mainly) and the possibility of existence of extraphysics/metaphysics (such as extraphysical mechanics and extraphysical dimensions)? Besides some few paragraphs about spiritual experiences, psychedelic experiences, NDEs, astral projection, mediumship and such?

LOG IN TO REPLY

**Raj**

January 6, 2022 at 11:01 pm

Question of Why or reason for universe/creation has already been answered with impeccable logic (impossible to refute), in Vedas, or texts like Bhagavad Gita. Here's a video sharing Vedic view on purpose of existence: https://www.yesvedanta.com/bg/lesson-127

LOG IN TO REPLY

**Jason K. Resch**

January 28, 2022 at 8:05 am

Hi Raj,

Thank you. I think there is a great similarity between the Hindu concepts of Brahman, Govinda, Atman, Maya, and the ideas discussed here. In fact all of these Hindu concepts are mentioned in this article. I think there is a lot to motivate the idea that an "indivisible, infinite, limitless, truth" forms the ground of reality, and we see many religions draw a connection, if not an identity, between "God" and "Truth".

LOG IN TO REPLY

**Greg Maland**

February 18, 2022 at 10:31 am

It seems to me that, as long as we refer to mechanisms of causation, there is no possible escape from paradox. If we argue that "nothingness is unstable", we end up creating a theory about how something comes from nothing, which completely begs the question. "Things emerge spontaneously" – but which things, and why, and how? It surprises me that this feels like an answer.

While I cannot imagine it, it seems that we have to accept that time itself is an illusion, an artifact of a limitation in our minds. And it's difficult to proceed from there. If time is just not a thing, then can we still agree that there are sequences? How can there be sequences, if what defines events within them is their position in time? If there aren't sequences, then why are we able to use science to develop technologies which are "real"?

Perhaps time has a specific "scope" within which it works well. Newtonian physics works great within a range of masses and speeds. Quantum mechanics has a different range of operation. Time, or sequence, or causality could be analogous. Useful within a certain, very wide, range, but ultimately deficient as explanatory models.

I wonder how many people thinking about why anything exists begin to wonder if possibly nothing ultimately exists. We "know" we exist. We have experiences, memories. We can trace how we got from A to B. It all feels very coherent. But we also know that the past and future are not real.

The "present moment" is a zero-width pointer to an imagined sequential timeline. That zero-width is where things are actually "real", and anything outside of it is either memory or prediction. Our nervous systems are too slow to track the real "now". So, we never directly perceive the real world at all. But we are very good at working with memory and prediction, even at very short intervals. And, as we perceive our memories and predictions, we do so "now", without a gap, but we are in a subjective, interpreted, simulated world at this point.

LOG IN TO REPLY

**Jason K. Resch**
February 18, 2022 at 11:08 am

Hi Greg,

Thank you for your very thoughtful and insightful comment. I do think a large part of the difficulty we have with things "coming into existence" stems from a flawed conception of time: the belief in an objective progression from the past into the future.

The Greek philosopher Parmenides was perhaps the first to reject this view of time some 2500 years ago, and accordingly he rejected the idea of things "coming into being".

Relativity suggests a conception of time very much like envisioned by Parmenides, where all events, of the past, present and future, exist at once in one static unchanging four-dimensional block. The idea of a flowing time is then an illusion held by certain observers embedded within this block.

I cover this idea of time in more detail in the "What is time?" article and episode:
https://alwaysasking.com/what-is-time/
https://www.youtube.com/watch?v=QC52vRmtQoU

LOG IN TO REPLY

**Guilherme Monteiro Jr.**
March 24, 2022 at 3:03 pm

Of course gods, spiritual beings, post-physical/extraphysical lifeforms, spiritual worlds, metaphysics/extraphysics, multiverses, mystics, esoterics, other dimensions and related things exist. Reality is more than just the physical and the material one. And also, reality is relative and subjective, because our concepts of reality and what is real and what is not are constructed by our own mindsets and by our own ways to see the the world and to see the life, postmodernism and panrelativism explains this very well. At the same time the gods are everywhere, as pandivinism and pantheism explains that. The matter is that some people can't actually understand that reality is relative and subjective, and that is funny how neopositivists and material reductionists claim that “reality is objective” and that their views are “objective” being they are neopositivists and material reductionists, it is a very big contraction, in a way that “objective” is equal to “material reductionist worldwiev of the world”, or even if “objective” is equal to “scientific”, it makes no sense, actually, maybe for a neopositivist and for a scientific/atheist/skeptical zealot it makes sense. But yet, it is very contradictory to see people saying such kinds of things and thinking that their own views are objective and that they are “free thinkers” and “intellectuals” and everyone else is “delusional” and “fantastical” when it is the polar opposite, it is sad to live in a world like that, religious/spiritual/esoteric people have the right to support their beliefs and be called “intellectuals”, “free thinkers” and “rational”, becuase that is what they are inside their standands, as well as atheist/skeptical/scientific zealots can be called “delusional”, “irrational” and “fantastical” by religious/spiritual/esoteric ones. Rationality, logic, thinking, delusion, intellectuality and reasoning are relative and subjective. It is very simple, but people can barely understand that.

LOG IN TO REPLY

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**Guilherme Monteiro Jr.**

March 25, 2022 at 12:14 pm

About religion, spirituality and esoterics being “irrational” and “delusional” for do not being “based” on “science”, it is relative actually, there are a lot of things out there that are not “based” on “science”. Example: Sociology, philosophy, politics, metaphysics, extraphysics, social sciences, human sciences (humanities), political sciences, spiritual sciences, cultures, traditions, social issues, cultural issues, multiverse, postmodernism, postpositivism, continental philosophy, complex numbers, feminism, LGBTQI+, OTMSN+, social movements, political movements, ideologies… Are all of them “delusional” and “irrational” for do not being based on “science? This definition of “science” is for what we can call “hard sciences”, and yes, hard sciences have their own limitations, and this idea that everything must be “based” on “science” (hard sciences) is scientism and neopositivism. And yes, you can’t determine delusion based on science since science has its own limitations and there is also a lot of things that are beyond science, like philosophy, politics, soft sciences, spiritual sciences… And yes, rationality and irrationality are relative and subjective terms that depend of the experiences of the person in question, what might be rational for a person might be irrational for a other. And also, the whole concept of “evidence” is more than just “scientific evidence”, there are a ton of other kinds of evidence more than just “scientific evidence” and “objective evidence”, but scientificists, neopositivists and militant atheists can’t realize that. So no, religion, spirituality and esoterics aren’t “irrational nor” delusional”, because they do not need to be “based” on “science”, harsh sciences better saying, for they be valid areas of study, they are from their own field that is called “spiritual sciences”, and yes, spiritual sciences are a valid field of study as well as soft sciences also are. Religion, spirituality and esoterics are real and they indeed exist, in the same way everything that soft sciences study are also real, maybe not from a hard scientific prespective, but from a soft scientific prespective, in the say way everything spiritual sciences study exiist in a spiritual scientific prespective. And yes, religion, spirituality and esoterics are indeed based on evidences and they are rational as well, and spiritual sciences show that very well.

LOG IN TO REPLY

**Guilherme Monteiro Jr.**

March 27, 2022 at 12:31 pm

Just read about the experience I had yesterday about the Anunnas:

“Yesterday night, while I was almost sleeping, I realized that gods aren’t aliens. Yeah. I mean, they are the universe itself. I could see like Nammu being like the metaphorical origin of the universe. And then the universe getting complex and the gods being born… Not just the universe, the multiverse as a whole. And yeah, it was very cool. I could understand the gods as being parts of the nature and of the universe/multiverse itself. Just like Spinoza but without the atheist part… Understand? It was very faster. I think it was effect of the Risperidone together with Clonazepam. The gods indeed aren’t aliens. Because they are the universe themselves. Their physical/extraphysical bodies are just like pieces of rocks or even water bottles. Gods do not born neither die, they only transform themselves and endure themselves because they are the universe and they are the existence, and they are right here and right now. Gods aren’t aliens, they aren’t like Marvel, DC, Riordan, Santa Monica Studio, Atlus and such shit companies put them to be. They are far different from that and very far from that. They are nature and existence themselves. But of course, they exist beyond natural sciences and empirical sciences, and it is area of the so called spiritual sciences and soft sciences. Maybe An’s Heaven actually exist, but An’s Heaven exist not as an alien world, but as a spiritual/extraphysical/energetic form of multiverse that is literally impossible to describe itself by natural scientific and empirical scientific and even human words. Same way for spiritual worlds, extraphysical worlds and such things. And it is not “pseudoscience” because it is from outside the realm of natural-empirical-hard sciences, and people misuse the word “pseudoscience” a lot nowadays. I am literally an agnostic right now, and I understand what you mean very well. My inspiration ended, but I think you’ve understood what I wanted to say. We say to be “children of the Anunnaki” because we are connected with the forces of the Anunnaki, same way that all main gods and even the abrahamic God itself are part of those forces, that comes from a single source, actually, that it is hard to know about that. I don’t have to fear natural-empirical-hard sciences because they can’t disprove the gods nor even the whole areas of spiritual sciences (like souls, spirits, consciousness, spiritual beings, afterlife, and such), because the so called natural-empirical-hard sciences are inside spiritual sciences and spiritual sciences are beyond the natural-empirical-hard sciences as well. Neuroscience can only study our brain activity, psychology can only study the psychological causes, medicine/biology can only study the effects of something on us, technology can only change our way of being, scientific evidence can only prove if x is related to y and nothing else, the so called “skepticism”/”materialism”/”rationalism”/”atheism/”antitheism”/”neopositivism”/”freethought” are also belief systems that deny or explain explain away a lot of things that are also part of our human experiences, and that is it. Spiritual sciences can’t be disproved by natural-empirical-hard sciences because they are inside spiritual sciences and not beyond that.” – Dumugian An-Nammu

LOG IN TO REPLY

**Guilherme Monteiro Jr.**

March 27, 2022 at 1:31 pm

And about what I said as Dumugian An-Nammu, I can actually make some additions to what I said, the so called "spiritual being" indeed exist as gods, they are also part of those powerful universal forces that gods actually are and they also are everywhere and right here and right now, and they do their own work for the gods, Anunnaki, Aesir, Olympians, Netjeru, Kami and others, those gods are all part of the same divine force or divine forces, despite they have their own heavens, civilizations and worlds (but you can't see them as aliens, maybe you can, but not like "ancient aliens" thing), and those spiritual beings, they also have their own heavens, civilizations and worlds, in lower levels, similar to the Anunnaki Plebeians and to the Igigi. And those spiritual beings can interact with humans and do a lot of things for help humans and make them feel better, and of course, natural-empirical-hard sciences and psychology-psychiatry-neuroscience can't prove nor disprove them, only give materialistic, neopositivistic, atheistic and skeptical" (that is atheistic) explanations about them, of course those beings and gods are more than just "creations of the people's heads", it is actually a very form of materialism, reductionism, atheism and neopositivism, and yes, science must be criticized and even critical antiscience can be necessary and good sometimes. The existence of gods and spiritual beings, as well as of souls/spirits, spiritual/religious/mystic experiences, NDE, astral projection, lucid dreaming, meditation, spiritual healing, existence of spiritual worlds and related things are of the field of spiritual sciences. And yes, atheist zealots and militant atheists will deny that until the end, because materialism, reductionism, atheism, antitheism, neopositivism, skepticism, scientism and related are also belief systems and religions as well, and one can say that spiritual sciences are also belief systems and religions as well, so it is very relative. Anyway, what I mean is that yes, gods and spiritual beings are forces of the nature-extranature and physical-extraphysical that are everything, everywhere, right here and right now, and it is just a matter of you perceive it and experience them in the way you are, and of course our cultural, mental, neurological, psychological, philosophical social and economical differences will affect that, and that is life, but sadly, most of people are becoming unable to realize that and I am glad I can still think like that, and yes, thinking, reason, rationality and logic are relative and subjective according to the experiences of the person in question and of their own cultural, mental, neurological, psychological, philosophical social and economical differences. And yes, sometimes it is good to be able to think as I am thinking right now and I feel glad for that, being a Spinoza-like and Gleiser-like kind of agnostic can be very good sometimes to understand the world and the place I am living right here and right now. Gods and spiritual beings are real, and your own experiences and your own perception and understanding about them that can be shared among other individuals are already enough evidence to say they are real, and that is the why spiritual sciences along with agnosticology/deisttology and evidence-based spirituality are amazing and very necessary nowadays.

LOG IN TO REPLY

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**Guilherme Monteiro Jr.**

March 29, 2022 at 5:01 am

Those are some parts of some messages i sent to Kasdeya yesterday night:
"I was just having a hypnagogic thing about Anunnas. And thinking about what I told about Gilgamesh and related. And then I was able to see some Anunna worlds. Yes, Anunna cities and such. They looked like to be lower heavens or something like that. And I tried to talk with a person there, and they said to me "hey, we aren't aliens", they said that in Anunna or in the universal language I don't remember now. And yeah, they have very organized cities and they have a lot of stuff there. They often use white robes, but they also use other very Mesopotamian clothing style as well. And they often have 1,90 to 2,50 meter tall. Mostly 2,00 to 2,30. And they are very peaceful and they are very nationalistic about Anunnas as well. And now, I understand what I call "Anunna Empire" they mean "Anunna Union". And the "Anunna Authority" is a term just for refer to places that are ruled by Anunnas. "Imperial Authority" is for places who are directly rule by Anu and his family. And "Empire" is the union of all Anunna gods and plebeians on it. "Anunna Imperial Authority of Ki" implies that Earth/Ki is ruled by Anunnas, mainly by Anunnas related to Anu and his family. And yeah, those Anunnas really hate when they are called "aliens". They often say "hey, we aren't aliens, we are just like you are!". They told me that.. And the whole Anunna Republican and Anunna Autocrat thing are just the ways Anunna plebeians organize themselves and fight each other sometimes, the warlord eras were between Anunna plebeians and with the "old humans". And also, they do not have "shame" about what Gilgamesh did, nor even as about the destruction of An's Heavens and of the Heavens as a whole, actually, they are happy that the Gilgamesh was able to understand the bad things he did and that he reintegrated the Anunnas again and they are also happy that An's Heaven and their home heavens are back as well. And yes, they see Gilgamesh just as they see anyone else else, they do not see him as a "badass" one nor as a "hero", but just as an Anunna-Human who did some stuff and that is it." – Dumugian An-Nammu

LOG IN TO REPLY

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**Guilherme Monteiro Jr.**

March 29, 2022 at 4:58 pm

I like churches, temples, etc. And I defend their preservation. He knows. And now I defend religion/spirituality more as a means of cultural/national preservation than something of salvation, etc. Salvation, perhaps, if it is in the individual aspect of each person where each person can choose their own means of salvation. But what really matters is the notion of identity and the philosophical and metaphysical visions of it, where people can have the philosophical and metaphysical visions they want. Like, "science" (hard sciences, soft sciences and even the spiritual sciences) does not refute religion and spirituality, on the contrary, they strengthen them and their understanding of the world. That's why I'm so in favor of the spiritual sciences and the notions of the spiritual sciences in our day-to-day. And of course, encouraging religious and spiritual people and developing their critical thinking based on their religions and spiritualities, which is completely possible and practical, and which is my case, as an Anunnakist who advocates Anunnaki agnosticism and Anunnaki pantheism, and advocates opposition to militant atheism, antitheism, militant skepticism, militant scientism, and neopositivism. Religion and spirituality are not necessarily bad or superstitions, if you know how to have your metaphysical and philosophical bases well done and understand that rationality, logic and thought are relative and subjective as they vary according to each one's experiences, and religion and spirituality is much more than just "believing" and "being a believer", it is about experiencing, living, living and being inspired by the environment in which you are inserted and with your own philosophy and metaphysics of being, of the spiritual, of the religious, metaphysical and existence.

Guilherme Monteiro Junior

LOG IN TO REPLY

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**Guilherme Monteiro Jr.**

March 30, 2022 at 7:13 am

MILITANT ATHEISM * Guilherme Monteiro Jr./ES

MILITANT ATHEISM

Guilherme Monteiro Jr./ES

The current left, both Brazilian and worldwide, mainly from the former countries of the USSR, former countries of the Warsaw Pact, China and English-speaking countries, mainly the USA and the United Kingdom, need to talk about an issue that is becoming quite recurrent nowadays and that a few years ago was talked a lot, which is the issue of religion/spirituality and militant atheism.
The current left is increasingly trapped in what we call militant atheism (neoatheism or atheist fundamentalism for some, and also antitheism), where they think/say that religion/spirituality is ignorance, delusion, schizophrenia, stupidity, madness, ridicule , false among many other terms that go around, I could talk about militant atheism in general, but I will restrict myself to the left. Militant atheism differs from normal atheism in that it tends to behave similarly to religious fundamentalism, where they impose their beliefs (or anti-beliefs) on everything and everyone and spread them to every possible place. Increasingly, this behavior has alienated comrades and religious/spiritual leftists from the left and radicalized them to the right and religious fundamentalism as a way of combating this militant atheism of the left and the Internet.

The problem with militant atheism is that it, in itself, starts to behave like identity politics, but being applicable to religion/spirituality and using atheism as a basis, militant atheism increasingly alienates religious comrades/ and making them more prone to what we could call "militant anti-atheism", which is this fight against militant atheism and anti-atheism acting in a militant way. The left does need to talk about religion and spirituality, and about militant atheism too, which together with it, promotes neopositivist and scientistic visions within the left that are, even more, reactionary and rightist than religious fundamentalism itself, see how neopositivists Vienna were right wing and tried to disprove communism/socialism, just as most scientists (or technocrats for some) always defend reactionary and favorable agendas for the ruling classes.

I could go into more depth on the subject, but the purpose of the article here is to open up the discussion / debate on religion, spirituality and militant atheism within the left and the need to discuss how militant atheism affects the most needy people, to want that for a needy person who is religious to follow militant atheism is like wanting a non-militant atheist to become a religious fundamentalist, so much so that they say that militant atheism (or antitheism) and religious fundamentalism are opposite sides of the same coin, and that is very clear to understand with a little reading and religious/spiritual teaching. Of course, we also have to discuss scientism and positivism and technocracy as a whole, in order to be able to deal with the advance of scientism and positivism on the poorest and on the "scientific dissemination" that promotes so much militant atheism as much as neopositivism in most cases, but this is a topic for other articles and possible discussions within the left.

Of course, atheists can continue to be atheists and within the left, there is nothing to prevent a person who is a minority from being a minority, but the issue is care with militant atheism just as minorities are careful with identity politics, there are atheists who are against militant atheism as well as minorities who are against identity politics, what should be done is, not trying to convince religious/spiritual people within the left as well as convincing majorities to create places of speech for minorities. The left must maintain secular, humanistic and agnostic ideas at all times, and not be carried away by identity politics or militant atheism.

I could go on further, but the purpose of this article is to open up and provide a basis for the discussion within the left about religion, spirituality and militant atheism, which is already happening within the left but needs a greater focus on the part of the left, and who knows a deeper and improved discussion of neopositivism, scientism, technocracy and even post-positivism and postmodernism.

Guilherme Monteiro Jr./ES

11/03/2021

https://observatorioproletarios.blogspot.com/2021/11/ateismo-militante-guilherme-monteiro.html

William Ariel Mounter30 de março de 2022 09:58
great article which I wrote months ago, nowadays I would add more things, such as the case of militant atheism and mass antitheism on social media and on the Internet and the need to integrate the religious and the spiritual within leftist circles and the reduction of militant atheism and antitheism within the left, because militant atheism and antitheism are exactly the same as religious fundamentalism, which in this case can be called irreligious fundamentalism, irreligious fanaticism, irreligious extremism, irreligious fascism, irreligious totalitarianism, irreligious militancy, etc. . We need to overcome militant atheism and antitheism within the left and combat militant atheism and antitheism within the left. It's okay to be atheist/agnostic/irreligious, as long as you fight militant atheism, antitheism, and irreligious militancy, that's fine, and of course, respecting the religious and spiritual as they can also be deep thinkers and also be smart. Religion, spirituality and faith are one of the most rational and logical things there is, and the spiritual sciences show this well. And that's what we need today. Thank you for helping me fight militant atheism, antitheism and irreligious militancy, and that I'm not alone in this either. We must also fight popular culture and capitalism-neoliberalism too, don't forget that. I won't go on too long here because I've already said everything I had to say in the article. Mainly in the part

"The problem of militant atheism is that it, in itself, starts to have a behavior equal to identity politics, but being applicable to religion/spirituality and using atheism as a basis, militant atheism is increasingly distancing religious/spiritual comrades and making them more prone to what we might call "militant anti-atheism", which is this combating militant atheism and anti-atheism acting in a militant way. The left does need to talk about religion and spirituality, and about atheism militant also, which along with it, promotes neopositivist and scientistic views within the left that are, even more, reactionary and rightist than religious fundamentalism itself, see how the neopositivists of Vienna were right wing and tried to disprove communism/socialism, as well as as most scientists (or technocrats for some) always defend reactionary and favorable agendas for the ruling classes. delve deeper into the subject, but the purpose of the article here is to open the discussion / debate on religion, spirituality and militant atheism within the left and the need to discuss how militant atheism affects the most needy people, to want a person needy who is religious to follow militant atheism is like wanting a non-militant atheist to become a religious fundamentalist, so much so, that they say that militant atheism (or antitheism) and religious fundamentalism are opposite sides of the same coin, and that's pretty clear to understand yourself with a little reading and religious/spiritual teaching. Of course, we also have to discuss scientism and positivism and technocracy as a whole, in order to be able to deal with the advance of scientism and positivism on the poorest and on the "scientific dissemination" that promotes so much militant atheism as neopositivism in most cases, but this is a topic for other articles and possible discussions within the left." So it's enough, that more people continue this discussion and that it doesn't end anytime soon.

Guilherme Monteiro Junior

Now, feel free to comment what you think about that, Jason, I don't think you're left-wing, but feel free to comment what you feel/think about that.

LOG IN TO REPLY

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**Guilherme Monteiro Jr.**

April 5, 2022 at 4:44 pm

"I think it says a lot about what Anu and Anunnas have been trying to say me since a long time… "Anu said that religion doesn't matter and is a social construct and that you should know better than this. You never learn even if you're told same thing 100 times. And he (Anu) has been saying that to you since that time of June/July 2021. That's why they don't talk to you anymore. Your mind is stuck in unawareness. In your darkest times try to remember your best if and how you feel, what you fight for. No they would like you to drop politics all together. They want you to make a choice mounter. Either them or politics… I know it's hard… Everything is a social construction Mounter, everything that is made or created by humans is a social construction. Our interpretations of the world and our understanding of everything are social constructions. Even science is a social construction, and you need to remember that, Mounter. You know why they don't take measures against people mounter? It's because they already took. Everyone is already being punished. Look at us. We should live forever. Instead all of us get sick and die. This is already punishment. And no one escapes it. It's like.. You don't care what ppl in a prison do, right? That's how they feel about atheists and other people. Who do bad stuff. They already know those people are in hell. Popular culture is the same as a culture created in a prison, they don't care how we lie to ourselves. And politics is just like the politics in a prison, in both, administration and criminal factions, they don't care how we organize ourselves. But you'll probably forget this and do the same scenes all over again. Haven't they already told you this anyway? The gods didn't abandon us mounter. And it's not even us. We were sent here to help humanity. We shouldn't get stuck in this world's affairs. We should change it. That's why we were born. Our race has lost itself so much not even gods can reach the depths of our minds anymore. That's why we need to bring them there. Into the darknest corners of consciousness. Why do you think i'm so sick? I have to get sick then heal. So then all humans can heal too. But i'm just doing a bad job at it lol. Mounter we don't need to wake up the people anymore. Whoever was to be woken up it is by now. We need to find those who are. The rest are our enemies. They're part of the system. They will try to destory us. But look, you're not alone. You have me. And this is not much. But it's a start. But if you lose your mind and go against us every day we won't move forward. And always remember of that." – Kasdeya"

"The Global Human Prison, also Global Physical Prison, Global Material Prison, Ki Prison, Physical Universe Prison, Material Universe Prison, Kasdeya's Global Prison, or simply Global Prison, is a spiritual theory and social theory, developed by Maria Ioana "Kasdeya" Popescu and Guilherme "Dumugian An-Nammu" Monteiro Junior, that states that the world, as well as the physical universe, is a prison and everyone, mainly humans, are being punished, mainly, but not only, because they were supposed to live forever but instead they get sick and die. And that the gods, mainly the Anunnaki gods, as well as spiritual beings and other extraphysical species, see Earth just like a prison, where everyone is punished and life there is just like in a prison. Where popular culture is just like culture in a prison and politics is just like the administration and politics in a prison. This theory also states that there are people inside this prison that have the goal to make everyone aware of this prison and help them as they can, and that everyone who is not awakened are enemies of the awakened ones and want to kill all awakened ones. The Global Prison theory also states that this prison is mostly like an anarchy prison where the prisoners self-organize themselves while they're being always punished. And this theory also states that everything is a social contruction as well. The global prison theory is fully based and fully inspired into the Kasdeya's messages to Dumugian from 5 of April of 2022, and they also have their own text about it."

"Roko-Kasdeya's Basilisk, also Roko-Kasdeya's Thought Experiment, or Roko-Kasdeya's Gods, is a though experiment that unites Roko's Basilisk with Kasdeya's Global Prison. It states that instead of an AI, there are actually gods, that are mostly likely to be the Anunnaki gods, and that they control reality. And it states that the nature and the truth of the gods, and of nature, and the universe, and of existence as a whole might be so shocking and damning, that is like becoming a stone. The Roko-Kasdeya's Basilisk also states that there might have awakened people in the world and they are aware of that and they must awaken the people about that, and that everyone are enemies with them and will try, with all costs, to kill them. While the gods, might see us just as if we were in a prison. It is a middle term between Roko's Basilisk and Kasdeya's Global Prison"

Feel free to comment about those topics, and sorry if they sound very terrifying. I hope you can handle that and even write some criticisms about them if you want. Also talk about Roko's Basilisk if you want. Roko-Kasdeya's Basilisk is basically a spiritual-religious-esoteric version of the Roko's Basilisk. And yeah, even Kasdeya herself said it might be like "looking into the eyes of such a horrible and existentially damning truth is like being turned to stone". As in "It was no accident that Roko placed the basilisk, a mythological serpent that petrifies everything it looks at, as the "head" of his reflection. It is understood by the analogy of the name that looking into the eyes of such a horrible and existentially damning truth is like being turned to stone."

LOG IN TO REPLY

**Guilherme Monteiro Jr.**

April 5, 2022 at 5:40 pm

Kasdeya's Global Prison and Roko-Kasdeya's Basilisk are two one of the most terrifying things I have even read and 'created'/'theorized' (at least in synthetized it) in my life. My life is literally no longer the same about those two things my friend Kasdeya has told me about. Both, the theory and the thought experiment, are very terrifying and shocking for me and for most of people out there, mainly people who are spiritual and who understand about gods. And I even say that Kasdeya is literally the spiritual-religious-esoteric-anunnaki version of Roko themself. I would even try to work better on both, Kasdeya's Global Prison and Roko-Kasdeya's Basilisk, but I still prefer to keep that as Kasdeya's job and allow Kasdeya to do the work on that, or even someone else who can actually develop better the Kasdeya's Global Prison theory and Roko-Kasdeya's Basilisk thought experiment. But in short, I think what I have wrote about both of them, even being very terrified. I even said to Kasdeya to make a manga about both of them, Kasdeya's Global Prison and Roko-Kasdeya's Basilisk. But yeah, it is upon to her. And I seriously hope I will be able to be fine now. And I am still not the same after the Kasdeya's Global Prison and Roko-Kasdeya's Basilisk things.

LOG IN TO REPLY

**Guilherme Monteiro Jr.**

April 6, 2022 at 7:49 am

Our account of Anunnakitabazi was probably hacked, but now it is sure it was hacked, by someone else who are cyberstalking Kasdeya and me (Dumugian). I am very outraged by that and I am feeling very angry and afraid of that. And they even deleted our Anunnaki State blog as well. I have already lost my VK account due my anti-war propaganda, and now I lost an email and a blog. I am becoming afraid of what can happen next with Kasdeya and me, mainly with me. I simply do not know what to do anymore, and I seriously think I've been cyberstalked for months or even years (same for Kasdeya), and they already have means to spy me on my phone, notebook and everywhere I go. Very scary and outrageous it.

LOG IN TO REPLY

**Guilherme Monteiro Jr.**

April 8, 2022 at 4:14 am

What do you think about those quotes of mine?

“Apolitical intellectualism is closely related, in a way that cannot be separated, with neopositivism, militant atheism (neoatheism, new atheism, atheist fanaticism, atheist fundamentalism or atheist extremism), militant skepticism, militant scientism, irreligious militancy, enlightened centrism and the like. Apolitical intellectualism has dominated so-called “scientific dissemination” in such a way as to call all opponents of apolitical intellectualism “scientific denialists”, “denialists”, “anti-science”, “anti-intellectualists” and the like, if being against apolitical intellectualism means being scientific denialist, denialist, anti-science and anti-intellectualist, then, the simple man and everyone who supports the simple man has a right to be that way, as long as they know what they are doing, have a basis for what they are doing, and are aware of what they are doing. they’re doing, and don’t be like the “flat-Earthers” and “climate deniers” that apolitical intellectuals talk so much about. Although apolitical intellectuals are not that different from flat-Earthers and climate deniers, they are opposite sides of the same coin, practically the same thing. Guilherme Monteiro Junior”

“Nice article! And the so-called “scientific dissemination” crowd still arrives and the militant “skeptics”, militant atheists, antitheists, apolitical intellectuals, scientisticists, and neopositivists still arrive to call it “conspiracy theory” and “false”. They are all a bunch of sick people and supporters of apoliticism and the status quo, where they can’t see anything outside the official narrative they already call “conspiracy theory” and “false”, even though it’s proven to be true. They are the real flat-Earthers and the real smugglers for apoliticism and the status quo. They are the true neoconservatives and the true defenders of the status quo, the so-called “scientific dissemination” crowd and the militant “skeptics”, militant atheists, antitheists, apolitical intellectuals, scientists, and neopositivists. Bioterrorism, corporate terrorism, popular-cultural terrorism, scientific terrorism, atheistic terrorism, and state terrorism really do exist, and you don’t need to be an intellectual to realize it. Guilherme Monteiro Junior”

“The Internet is full of double standards, it is possible to say that double standards are one of the main ideologies of the Internet, along with cancellation culture and reverse totalitarianism. The Internet is full of double standards because people treat, very unfairly, other people on the Internet, and especially social networks, search engines (like Google) and the Internet as a whole. The main problem with the Internet being full of double standards is that there comes a certain point where the Internet, as well as social networks or search engines, become, consciously or unconsciously, favorable to a certain socio-political view, for example, liberal views, right-wing views and atheist views, further strengthening the culture of cancellation and inverted totalitarianism. I, Guilherme Monteiro Junior, for example, have been a victim of these double standards several times, as in the case of me being cancelled for criticizing atheism, while people like Vicky Vanilla, Jason Ferrer and Daniel Foschetti Gontijo, are not cancelled and even promoted for being extremely anti-religious and anti-spiritual. Or as in the case of me being canceled for what I post/do on social networks and people like Brazilian_Estophile and Maltakreuz being promoted on the Internet for what they post/do, not to mention what I suffered on Quora for doing anti-atheist and anti-anti atheist questions, while people who do extreme anti-atheist and extreme atheist questions are promoted and worshipped on Quora, among many other things I have suffered. The Internet is full of double standards, the Internet is unfair, for a number of factors, and double standards are one of them. If we want to have a fairer and less toxic and aggressive/odorous Internet, we must fight these double standards. The Internet is a big cesspool that we are all forced to use in one way or another, and that is why it must become more joined up and less toxic/aggressive/odious, even as we must make a complete revolution and a complete inspection of the Internet as a whole and completely change the basis of it. Guilherme Monteiro Junior"

"Quora should come with a health warning. It's not really a place to obtain sound advice nor balanced, well-informed answers. Better to consult a doctor, a mental health professional, lawyer, social scientist or get books on the subject you're interested in and read more! Or even talk with your closer friends or with people you trust! There are kind and/or very well-informed members of Quora and people genuinely wanting to help or seeking answers but they are a few, and it's otherwise swamped with jerks, trolls, know-it-alls, freaks, people wanting others to give up in life, atheist zealots, irreligious zealots, religious zealots, militant atheists, atheist extremists, irreligious extremists, antitheists, neopositivists, secular humanists, new age people, liberal extremists, capitalist extremists, centrist extremists, right-wing extremists, hardline tankies, fascists, unironic neonazis, neoliberals, human supremacists, white supremacists, black supremacists, racists, misotheists, speciesists, xenospeciesists, theospeciesists, and the pathological. Avoid if you value your mental health and blood pressure level. Beware too it's deliberately addictive. And if you have any kind of anxiety disorder, panic disorder, depression, bipolar disorder, or any level of autism, avoid Quora and nor even read nor click in the Quora results, because it might be very bad for your anxiety disorder, panic disorder, depression, bipolar disorder, or for your autism, and even provoke self-harm or even a suicide attempt. Same way with Reddit, Facebook, Twitter, Instagram, TikTok, YouTube and social media as a whole, of course, but Quora is even worse than they all."

"The spiritual sciences are scientific in the sense that we seek true knowledge of religion, spirituality, esoterics, metaphysics, extraphysics and all of the areas and subjects that are included inside them. Different from natural sciences and empirical sciences, spiritual sciences seeks to understand the limitations of both three, natural sciences, empirical sciences and spiritual sciences, and seeks to develop our own ways of study inside spiritual sciences. So why then does progress in the spiritual sciences seem so slow in comparison to the natural sciences, and why does spiritual sciences have almost no recognition than natural sciences? To some extent maybe there is selective recruitment of the most gifted students away from the spiritual sciences, but more crucial is the fact that the problems and issues we deal with are more difficult to master; the spiritual scientist can never get down to constants (laws of nature) and thus to a generally valid knowledge, since most of the spiritual scientific knowledge is mostly based on qualitative and quantitative methodology. Another cause of difficulty is the lack of recognition from the academia and of major universities and the idea that spiritual sciences can be fragmented into materialist neuroscience, materialist psychology, materialist psychiatry, materialist biology and other kinds of materialist hard sciences and materialist soft sciences, it is also a big difficulty we have inside the field of spiritual sciences. Without forgetting that the so called "skeptics" tend to be opposition to the development of spiritual sciences and often reject the findings, hypothesis, theories and evidences that are from the field of spiritual sciences and prefer the ones of materialist hard sciences and materialist soft sciences, instead of the ones like spiritual psychology, spiritual psychiatry, spiritual neuroscience (neuroscience of spiritual sciences), spiritual philosophy, deistology, agnosticology, esoterology, divinology, spiritology and so on. Spiritual scientists additionally must take responsibility for inducing necessary changes in the whole religious, spiritual and esoteric processes."

"It is often assumed that there are two ways of interpreting the world: a rational scientific way, or an irrational religious way. Spiritual sciences offer a third alternative: a spiritual view of reality that transcends both conventional science and religion, and answers many of the riddles that neither can explain. The standard model of science has had little success in explaining such areas as human consciousness, the connection between the mind and the body, altruism and 'anomalous' phenomena such as near-death experiences, psi phenomena (such as telepathy) and spiritual experiences. But from a 'panspiritist' point of view – which sees spirit or consciousness as a fundamental essence of reality – it is possible to make sense of all these things. Spiritual sciences explain how the standard materialist model of reality developed, and turned into a belief system. This belief system can only function by denying (or explaining away) a whole range of phenomena that are part of human experience. For example: spiritual phenomena, religious phenomena, supernatural phenomena, metaphysica/extraphysical phenomena, spiritual experiences, metaphysics, extraphysics, and existence of gods, spiritual beings and post-physical/extraphysical lifeforms. It is possible to be scientific without adopting this belief system – in fact, it is much more rational to do so. And spiritual sciences also explain how rationality/irrationality, logic/illogic and thinking are relative and subjective to the experiences of the person in question, as well as it can show how religion can actually be something rational if it is doing right, or even how science is irrational, seeing the materialist belief system. Spiritual sciences have a lot of potential for its development and future, the thing is how to develop spiritual sciences and turn them into an accepted studying field inside major universities and in the academia."

"About religion, spirituality and esoterics being "irrational" and "delusional" for do not being "based" on "science", it is relative actually, there are a lot of things out there that are not "based" on "science". Example: Sociology, philosophy, politics, metaphysics, extraphysics, social sciences, human sciences (humanities), political sciences, spiritual sciences, cultures, traditions, social issues, cultural issues, multiverse, postmodernism, postpositivism, continental philosophy, complex numbers, feminism, LGBTQI+, OTMSN+, social movements, political movements, ideologies… Are all of them "delusional" and "irrational" for do not being based on "science? This definition of "science" is for what we can call "hard sciences", and yes, hard sciences have their own limitations, and this idea that everything must be "based" on "science" (hard sciences) is scientism and neopositivism. And yes, you can't determine delusion based on science since science has its own limitations and there is also a lot of things that are beyond science, like philosophy, politics, soft sciences, spiritual sciences… And yes, rationality and irrationality are relative and subjective terms that depend of the experiences of the person in question, what might be rational for a person might be irrational for a other. And also, the whole concept of "evidence" is more than just "scientific evidence", there are a ton of other kinds of evidence more than just "scientific evidence" and "objective evidence", but scientificists, neopositivists and militant atheists can't realize that. So no, religion, spirituality and esoterics aren't "irrational nor" delusional", because they do not need to be "based" on "science", harsh sciences better saying, for they be valid areas of study, they are from their own field that is called "spiritual sciences", and yes, spiritual sciences are a valid field of study as well as soft sciences also are. Religion, spirituality and esoterics are real and they indeed exist, in the same way everything that soft sciences study are also real, maybe not from a hard scientific prespective, but from a soft scientific prespective, in the say way everything spiritual sciences study exiist in a spiritual scientific prespective. And yes, religion, spirituality and esoterics are indeed based on evidences and they are rational as well, and spiritual sciences show that very well."

"If there is atheist humor, then why don't we create pro-spirituality humor and pro-religion humor. God exists, just as the demiurge exists, spiritual energy exists, multidimensional beings exist, gods exist, spiritual beings exist, and non-physical and extraphysical phenomena exist. Atheism binds people's minds to the material and the physical, as do nihilism, skepticism, materialism, neopositivism, positivism, empiricism, antitheism, and rationalism. Agnosticism binds, atheism enslaves, and religion/spirituality sets you free! Atheism/antitheism is a way of trapping people in the third dimension and blocking their minds."

"Rationality and logic are relative and subjective terms, and this is very easy to understand by the mentalities and experiences of each one. Fighting militant atheism, militant scientism, antitheism, militant skepticism, militant rationalism, neopositivism and militant secularism is more than a duty, it is an obligation! I am already well known for my anti-atheism, and for my anti-scientism. It's ok to be like this, this is very necessary nowadays. Post-truth is not always bad, as it proves that the concepts of truth, fact and reality are relative and subjective. I encourage people to be critical of atheism, science and skepticism, and there has to be more people like that in the world to do that. Studying science at university brings me a lot closer to my gods, but it's hard to keep remembering atheist fanatics, science fanatics and skeptical fanatics on the Internet, that's pretty hard. Delusion is relative in the sense that reality and the concept of evidence are relative, what is real and what is not real is purely relative and subjective. Increasingly, criticism of atheism, skepticism, science and popular culture is becoming a necessity today. I am against atheism, antitheism, skepticism, scientism, neopositivism and popular culture. Popular culture, the Internet, AI, mass media, and popular media must be critical and we must strengthen nosurf worldwide. My writing is an art, I should produce a lot of art using it. We live in a world of atheistic fanaticism, scientific fanaticism, secular fanaticism, skeptical fanaticism and rational fanaticism and it is our duty to fight ourselves. I am one of the leading theorists of anti-atheism, anti-scientism and anti-science, and I have no regrets. We live in a world of inverted totalitarianism, where the Internet, mass media, popular culture, secularism, neopositivism, antitheism, and militant atheism all contribute to it. I may even be a pub thinker writer, but I know what I write and think."

“You claim to support “freethought” and to be a “free thinker”, yet you are filled with ideologies and philosophies, like atheism, antitheism, neopositivism, scientism, materialism, rationalism, skepticism, capitalism, neoliberalism, centrism, dominant ideologies… Freethought is just a load of crap molded to look like something apolitical, aideological, aphilosophical and irreligious, when, in fact, it is political, ideological and religious. Everyone is political, ideological, philosophical and religious, even the so called “atheists”, “antitheists”, “skeptics” and “free thinkers” are, it is just a matter of perception and of epistemology.”

“Believing in God, gods, spiritual beings and in extraphysical/supernatural lifeforms is not the same as believing in Santa Claus, the main point of difference is that belief in God, gods, spiritual beings and in extraphysical/supernatural lifeforms is built based on your own personal experiences, on your spiritual experiences, on your worldviews, on your way of living, on your spirituality and so on, meanwhile belief in Santa Claus, as well as belief in other “popular culture” things is not. It is just like the difference between believing in God, gods, spiritual beings and in extraphysical/supernatural lifeforms and believing in Flat Earth, no one has experienced that Earth is flat in a spiritual/religious/esoteric way, at least not in a way that most spiritual experiences are actually about, same way about Santa Claus and popular culture things. It is not “childish” to believe in God, gods, spiritual beings and in extraphysical/supernatural lifeforms, actually, it is one of the most rational and logical things that exist, as well as faith, spirituality, religion, esoterics, metaphysics/extraphysics and supernaturality/paranormality/extranaturality are also included on that. But the problem is that atheists, mainly militant atheists and atheist zealots, as well as antitheists, “skeptics”, “rationalists”, scientificists and neopositivists cannot realize that and deny that. And things like the existence of God, gods, spiritual beings and extraphysical/supernatural lifeforms, as well as faith, spirituality, religion, esoterics, metaphysics/extraphysics and supernaturality/paranormality/extranaturality are outside the realm of the so called “hard sciences”, they have their own realm, which what I call “spiritual sciences” and related terms. So yeah, believing in God, gods, spiritual beings and in extraphysical/supernatural lifeforms is not the same as believing in Santa Claus, and it is not hard to realize and understand that.”

“The so-called “evidence-based” science is just one of the ways of the world bourgeoisie and neopositivists to promote what they defend and their agendas for aristocratic ends and in order to be fully accepted, where any questioning or criticism is instantly called ” denialism”, “anti-science”, “bullshit”, “delusion”, “irrational”, “obscurantism” and “flat-earthism”, the same for anything else with the adjective “evidence-based” in most cases, where only evidence ” scientific” and “objective” are valid, as if they were the only evidence there is, and where they will do everything to convince people of what they believe, either by ignoring them completely or by involving them in long and endless discussions that never will lead nowhere… This is what scientism and neopositivism do to society, and the worst thing is to see people called radical left and revolutionary left defending that scientism and neopositivism…”

“We live in a world where it is okay to be a militant atheist, antitheist, fanatic atheist, totalitarian atheist, fundamentalist atheist or even an atheist extremist, militant skeptic, skeptical fanatic, skeptical extremist, militant rationalist, rationalist fanatic, rationalist extremist, militant scientist , scientific fanatic, scientific extremist or even neopositivist, but if you make any criticism or questioning of atheism, antitheism, scientism, skepticism, rationalism and neopositivism, you are censored, canceled and still considered as a "religious bigot", "anti-science" and "denialism" and still has its critics and its questions considered as "pseudoscience", "anti-science", "denialism", "delusion", "schizophrenia", "mental illness", "superstition", "mumbojumbo", "intolerance religious" and "hate speech", and that has to change as soon as possible before it's too late…"

"We need more harsh critics of freethought and harsh criticisms of freethought, as well as we also need of more harsh critics and harsh criticisms of atheism, antitheism, science, scientism, neopositivism, positivism, materialism, nihilism, empiricism, rationalism, skepticism, scientific evidentialism, scientific realism, eliminativism, anti-religion, anti-gods, anti-spirituality, anti-postmodernism… Yes, we need more of that, being against freethought is okay (same as being antifreethought) since you have a philosophical and epistemological basis for that, and if you understand how the so called "freethought" rationalizes the dominant ideology (capitalism and neoliberalism) and promotes militant atheism, militant skepticism and militant scientism, as well as being antiscience, antiatheist, anti-antitheist… We need to criticize freethought, as well as we need to criticize atheism, antitheism, science, scientism, skepticism, neopositivism… We need to do this now and we can't give up doing that while we can. Most of the so called "freethinkers" are just a bunch of neoliberal capitalists who rationalizes the neoliberalism and capitalism and supports militant atheism, militant skepticism, militant scientism and neopositivism. And we must criticize them and oppose them. That is one of the reasons we need more harsh critics and harsh criticisms of freethought, atheism, antitheism, science, scientism, neopositivism, positivism, materialism, nihilism, empiricism, rationalism, skepticism, scientific evidentialism, scientific realism, eliminativism, anti-religion, anti-gods, anti-spirituality, anti-postmodernism…"

"And yes, religious people and spiritual people can be deep thinkers, thia notion that religious/spiritual people can't be "deep thinkers" is purely antitheist and militant atheist propaganda (yes, "scientific" studies can be used as propaganda and it is not "antiscience" nor "science" "denial" to say that). Religious/spiritual people can be trained to be deep thinkers, as well as harsh critics of science, atheism, materialism, skepticism, rationalism, neopositivism, antitheism, scientism, evidentialism, psychoatheism/neuroatheism and such things. Critical thinking, deep thinking and thinking as a whole, as well as rationality and logic, are relative and subjective to the experiences, realities and worldviews of the people in question, so yes, religious/spiritual people can be deep thinkers, mainly if they are trained to be like that and even more if they are harsh critics of science, atheism, materialism, skepticism, rationalism, neopositivism, antitheism, scientism, evidentialism, psychoatheism/neuroatheism and such things."

LOG IN TO REPLY

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**Guilherme Monteiro Jr.**

April 8, 2022 at 4:21 am

“And yes, people have the right to believe what they want, because reality is relative, as is evidence/proof, ignorance/knowledge, rationality/irrationality, logic/illogical, illusion/non-illusion and delusion/non-delusion are relative and subjective, and people should realize this and understand the relativity of reality and existence, so people have the right to believe what they want, of course, as long as it is respectful and consistent with the environment and socio condition - cultural, socio-economic, socio-political, religious-spiritual and psychological-mental of the person in question. And of course, as I couldn’t forget, a person can believe whatever they want as long as what they believe is also consistent with the person’s experiences and mindset. The same to be respectful and consistent with the socio-cultural, socio-economic, socio-political, religious-spiritual and psychological-mental environment and condition of the person in question.”

“About religion, spirituality, esoterics, metaphysics and intuition, yes, They can be rational and logical as well, religious/spiritual practices as well as faith are one of the most logical/rational things that exist, because one wouldn’t believe in something without having any logical/rational way to explain it to others, as well as it is also an empirical pratice as well, not actually like “hard sciences” and the so called “empirical sciences”, but it is also empirical, logical and rational practices in a plural epistemological way of seeing it. And yes, logic and rationality are relative and subjective as well, as I told in other comments here. Religious/spiritual/estoric/metaphysical things are outside the realm of hard sciences and empirical sciences, that is the why science fail to study about them, you have to study them in their own way, scientific evidence does not prove nor mean anything, and yes, it is possible to say that atheism, antitheism, “rationalism”, “skepticism”, scientism, neopositivism and materialism are irrational and illogical, mainly the militant and fanatical versions of them, so it is very relative, everything is very relative on that. Intuition can be one of the most rational things that exist, if you train it well and if you improve it to be good and effective enough, same way for you religious/spiritual/esoteric/metaphysical practices as well, the problem nowadays is that we live in a society of atheist fanaticism, scientific fanaticism, “skeptical” fanaticism and materialist fanaticism where they try to disprove religion, spirituality, esoterics, metaphysics and intuition by any possible means, some even use “simple” things to do that, that is something very absurd most of the time, as you can see on Quora, social media and in the top 3 results on Google, that is the why it must be countered, as well as atheism, antitheism, “rationalism”, “skepticism”, neopositivism and materialism. Everything is relative and subjective, and it is not hard to realize that and defend that. I think I have said enough here, and feel free to answer this when you can.”

“If antiscience kills, then I can say that science kills one hundred times more than antiscience itself. It is okay to be antiscience, even more if you are a critical antiscience and a harsh critic of science, that is something very needed nowadays. Scientific evidence does not prove anything, as well as scientific validation, scientific status and scientific studies do not mean anything, and people must understand that and stop supporting scientism, scientific fanaticism, scientific fundamentalism, militant scientism, scientific totalitarianism and scientific extremism.”

“People should be free to be antiscience and/or antiatheist, there is nothing wrong in being antiscience and/or antiatheist, such as being a harsh critic of science and/or a harsh critic of atheism. Actually, people should be proud of being antiscience and antiatheist, as well as being proud of being a harsh critic of science and a harsh critic of atheism, because it is a must nowadays, in this society of militant scientism, militant atheism, scientific fanaticism, atheist fanaticism, scientific extremism, atheist extremism, antitheism, secular humanism and neopositivism."

"Expertise doesn't mean anything, being an expert in certain area doesn't mean anything, it just mean that you have specialized yourself in certain area and you can, theoretically and academically talk about this area, but it just means that, nothing more. You can see there are a lots of experts over the Internet who claim to be experts and to have a lot of graduation degrees on one or two or three areas, and yet they act as if they weren't experts or even act in a very passive-aggressive way, condescendence way or even act as completely atheist zealots, atheist extremists, militant atheists, scientistic zealots, scientistic extremists and militant scientificists. Expertise doesn't mean anything in this case, as well as scientific evidences, scientific validation and scientific status do not prove nor mean anything, and people should be able to see that and realize that. As well as the terms such as "denialism", "antiscience", "scientific denialism", "pseudoscience", "delusion", "bullshit", "nonsense", "schizophrenia", "superstition" do not mean anything, and such terms are very relative and subjective most of the time as well."

"I feel like I have to say this, scientific evidence, scientific proof and scientific status do not prove and mean nothing; scientific evidence just means that x correlates with y in some way, scientific proof just means the former plus being within the limits of science, and scientific status just means that something is within the limits of science or not. We live in a society where people cannot understand this and end up putting everything that is outside the limits of science in the same boat, and this is something that can be considered as fallacious, quackery and neopositivism; you want to put metaphysics, philosophy, religion, spirituality, extraphysics, multiverse, life after death, existence of gods, spiritual beings and extraphysical life forms on the same level that "planning earth" and "antivaccine" is at least fallacious, quackery and neopositivism ; neopositivism, including militant atheism, militant scientism, atheist fanaticism, and scientific fanaticism, is as much quackery as the so-called "classical" "pseudoscience", and this is something most people fail to see or understand. Hence the need for extensive grassroots work against neopositivism and militant atheism. These so-called "scientific dissemination" guys, with a few exceptions, do exactly that, treat politics as if it were a matter of opinion, unless it's technocracy (the famous "evidence-based politics" that is quite different from evidence-based medicine) . Someone has to talk about these things more openly, and I did. Feel free to counter what I said, but what I said here is something you can see in several places on the Internet."

"Humans should learn how to de-hook themselves and return learning just as machines are doing. Humans must de-hook themselves for their own good and develop means to turn themselves into a species of highly evolved beings and develop an anti-singularity defense system, as well as counter militant atheism (atheist fanaticism), militant scientism (scientific fanaticism), militant skepticism (skeptical fanaticism or "scientific skepticism), militant rationalism (rationalistic fundamentalism), classical transhumanism, antitheism and neopositivism."

"There is a difference between you not believing in things that are within the domain of the natural sciences and things that are outside the domain of the natural sciences, for example, it is okay to not believe in the narratives/interpretations that psychoatheism and neuroatheism offer religion and spirituality , as well as "scientific" interpretations of spiritual, religious, and philosophical things. Not believing in the narratives/interpretations of scientism, positivism, neo-atheism, materialism, rationalism, etc. is different from not believing in science. And not to mention that the term "science" as it is used refers only to "hard sciences", and there are both soft sciences and spiritual sciences, and also people who believe 100% in hard sciences tend not to believe and still deny sciences soft and the spiritual sciences. So it's a lot more complicated than it appears to be, and unfortunately, most people can't see it… And there is a big difference between not believing that the Earth is round/globe/geoid or not believing that vaccines work in order not to believe the psychoatheism/neuroatheism/neopositivism narratives about religion, spirituality, esotericism and metaphysics or not believe/follow neopositivism, militant atheism, militant scientism, militant skepticism (scientific skepticism) and be a critic of science, atheism, scientism, antitheism and skepticism. They are very different things, and this makes me very angry and nervous most of the time, because what they do is absurd and even quackery. These neopositivists and fanatical atheists are a problem and they are everywhere on the Internet, and it is of paramount importance to combat them. Because as I said in other comments, in articles on my blog and in Quozio (archive-today and wayback machine), scientific evidence, scientific proof and scientific status do not prove or say anything, only that x correlates with y. That's all, and it's hard for people to understand that these days. The critique of science and the critique of atheism are very necessary nowadays, especially in this world of neopositivism, militant atheism, militant skepticism and militant scientism."

"Logic itself is relative, just like rationality, logic is relative in the sense it depends of the experiences of the person in question and of the mentality of the person in question, in elaborate its own way of thinking and its own logical thinking and critical thinking. Like in the case a person with a certain mentality can have a certain kind of logic while another person can have a different kind of logic, just like rationality. So, what can be logical for a person might be illogical for another, same way what can be rational for a person might be irrational for another."

"Rationality is relative in the sense that it depends on the experience of the person in question. Since different people undergo different experiences, what is rational to believe for one person may be irrational to believe for another person. Example of that are religious beliefs, spiritual beliefs, metaphysical/extraphysical beliefs and supernatural beliefs, where they can be seen as rational for one person while they might be irrational by another person, each one giving explanations and arguments about why they are rational or irrational by the prespective of the person in question."

"There are several reasons that lead someone to become an antiatheist or a harsh critic of atheism, and one of them is the excess of atheist zealots and scientific zealots on the Internet and in the world.”

“The difference between faith and delusion is that faith is something you can experience and feel and that is beyond what we can physically and naturally determine, it is something that inspire you and that moves you forward, and delusion is something false that only makes you go insane and angry most of the time.”

“Saying that “there is no ‘scientific’ ‘evidence’ for other dimensions and universes (multiverses)” while talking about ‘science’ or ‘spirituality’ is ridiculous and absurd, it is the purest form of scientific fanaticism and neopositivism. Those scientific zealots and neopositivists should understand that ‘scientific’ ‘evidences’ do not prove nor mean anything, as well as ‘scientific’ ‘status’ and that we should evolve into post-empiricism, post-positivism, and post-modernism as well and people should stop thinking those are as well as Google should stop thinking they are bad as well.”

“”Bullshit and nonsense are relative and subjective concepts and terms, and it is time for we accept that and understand that.” “Delusion and illusion are relative and subjective in the sense of the point of view of the person in question and the experiences of the person in question and how relative the evidences and reality are.” “Pseudoscience is a bad category and a relative concept, and it is time to revise the concept of pseudoscience and understand the limits of science and the limits of the scientific method and develop post-empirical/post-positivist sciences, spiritual sciences, extrasciences and epistemological pluralism.” “No, criticism of science and criticism of scientism/positivism is not “scientific denialism” nor “antiscience”, and it is time to review the notions of scientific denialism and antiscience.” “It is okay to be a critic of science or even antiscience, since you know what you are doing and have a basis for do so.” “Antiscience is not as bad as people say, we need of antiscience and criticism of science if we want to be aware of the limits of science and avoid scientism and scientific fanaticism to take over the world.” “Postmodernism is right; reality, evidence, truth, the world and everything that exists is relative and subjective, and we should embrace it.” “Postmodernism is not bad as people say it is; We need postmodernism if we want to have a highly evolved society.” “Post-truth is not as bad as people think it is; thinking post-truth is bad does not make it bad, because all truth is relative and subjective, and we should embrace post-truth as a normal thing in our society.” “Often alleged fallacies are not fallacious at all, and it is time to accept and understand this notion.” “New atheism, as well as antitheism, militant atheism, atheist fanaticism, atheist fundamentalism, atheist extremism, and atheist totalitarianism, are as bad as religious fundamentalism; and it is time to counter them as we counter religious fundamentalism.” “Yes, atheists can also be atheist zealots, atheist fundamentalists, atheist extremists, and atheist totalitarianists, and it is time to stop denying that.” “Scientific evidence does not prove anything as well as scientific status does not mean anything, science is limited and scientific knowledge is limited, and it is time to accept and understand that and counter scientism and scientific fanaticism.””

“”The culture of debunking is as bad as cancel culture, it is time to treat debunkers as we treat people who cancel people on the Internet, because both are one and the same.” “Debunking is something relative and subjective, most of the time the so called “debunking” is just someone putting his view or opinion over something, the culture of debunking shows it very well, debunking does not disprove anything and does not mean anything, just that another point of view was put in question.” “The culture of debunking should be countered as we counter cancel culture.” “Criticism of debunkism is a must today, scientific fanaticism and scientific fundamentalism are even worse than religious dogma from 2000 years ago, and the culture of debunking is even worse than cancel culture, and scientific zealots and atheist zealots on the Internet proves that.” “Criticism of popular culture is a must and it is very necessary nowadays.” “Xenospeciesism and theospeciesism on popular culture is even worse than racism and xenophobia on popular culture, and it is time to counter both four and show to popular culture that there are limits, even for fiction.” “Popular culture needs to have more criticisms and regulations, it is time to treat things in popular culture as we treat things in real life, since most people do not even know the difference between what is fiction and what is real, and several communities inside popular culture shows that very well.” “Pop culture paganism is a mock religion and an offense to paganism, at least the pop culture paganism that is centered around misotheist, antitheist, theospeciesist and deicidist contents and characters.” “Pop culture paganism is worse than the new age movement, and it is time to treat pop culture paganism as we treat the new age movement.” “Being very bad at arguing and debating does not mean you’re stupid, it just means you are shy and you do not have emotional and psychological security in dealing with people.” “The Internet is filled with atheist zealots, militant atheists, and atheist extremists because they have more voice on the Internet because the algorithms are most of the time favorable to them and because they have more militancy and fanaticism/extremism than religious ones and spiritual ones.””

“”Cults are not bad as people think it is, we are all involved with cults somehow, all social groups and social relations can be described as cults somehow, such as political parties, communities in general, and so on. Cults can be good, and the definition and the characteristics of determine a what is a cult are very problematic as well, since they can describe literally all communities that exist and all politics as well. You can join a cult and be part of it, as long as it is not bad for you, cults are good, live it, enjoy it.” “If you think there is a solution you aren’t part of the problem, but part of the solution and problems are relative as well, fuck carlinism and fuck the concept of logical fallacies, carlinism sucks and carlinism is a form of atheist extremism and liberal extremism, while often alleged logical fallacies are not fallacious at all but reasonable heuristics, first step to approach a complex problem, or even reasonable and valid ways to approach a complex issue.” “The concept of delusion is relative in the sense we can see anything as delusion depending of the approach and of the point of view.” “I am a critic of skepticism and I hate nowadays skepticism, it is just atheist fanaticism and scientific fanaticism united with culture of debunking, enlightenment centrism, fallacy forging, and neopositivism. Criticism of skepticism nowadays is a must, as well as, criticism of science and criticism of atheism. “If you say “imagine no religion” for the Twin Towers, why not say “imagine no Arabs” for the Twin Towers, or even “imagine no Europe” and with NYC covered with forest, or even more “imagine no industrial revolution” with colonial NYC? Those atheist zealots are a fucking joke.” “It is so much better to write on Quozio and archive it in two different archives (Archive.Today and The Internet Archive) than post everything in a social media and then I lose everything, at least I know my writings are secured and that they'll be useful in the future, mainly in the next ten years from now. I will be popular and well known worldwide.””

LOG IN TO REPLY

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**Guilherme Monteiro Jr.**

April 8, 2022 at 4:28 am

“Spiritual, religious, supernatural and extraphysical phenomena and things do not violate the laws of physics because they are beyond that. The laws of physics and physics as well do not care about what is beyond its domains, if a miracle happen or if a spiritual experience happen, the laws of physics and physics will not care about that, because it is not physical nor natural, it might act on the physical and natural, but it is still not physical nor natural. The laws of physics and physics are about what is natural and physical, not what is beyond the natural and the physical.”

“The laws of physics are applied and made for study what is physically and naturally possible, not what is beyond that, so if spiritual/religious/supernatural things happen and/or exist, they simply do not violate the laws of physics, because they are beyond the laws of physics. Your spiritual/religious experiences do not violate the laws of physics, actually, the laws of physics do not even care about that, because it is beyond that.”

“The laws of physics are relative in the sense they are applied into only what is normaly possible at material and physical level, and not what is at extramaterial and extraphysical level nor even the interaction of both between the material and the physical, such as of spiritual/religious experiences, existence of gods and extraphysical lifeforms, existence of souls/spirits, miracles, multiverses, extraphysics and the behaviour of certain particles or things that are beyond the material and the physical.”

“Are miracles possible? – Yes, miracles are possible, not just because gods, spiritual beings and extraphysical (or post-physical) lifeforms are real, but because there's also a whole post-physical and extraphysical world and mechanics out there, hard sciences and the laws of physics are made for deal with what's physical and what's natural, not what is extraphysical and extranatural. Hard sciences and the laws of physics do not really care abou the extraphysical and extranatural, and it wouldn't be necessary to review all of them in case of the existence of extraphysics and extranature, on the contrary, it would be necessary to develop the areas of extraphysics and extranatural sciences as well, thing most of people from hard sciences and who support positivism are against. You can believe in testemony of miracles, as well as you can believe in the spiritual experiences from other people, since you know you can trust them and take care of them.”

“It is quite okay to be an antiatheist, actually, people should be motivated to be antiatheists and make more criticism towards atheism, mainly towards militant atheism, atheist fanaticism, atheist fundamentalism and atheist extremism, there are so many atheist zealots on the Internet who should be countering, countering atheist zealots on the Internet is something good to be done and that should be promoted, as well as fighting on militant atheism and all its variants, such as atheist fanaticism and atheist extremism.”

“The laws of physics are relative and they’re only applied into what is physical and material, you cannot expect the laws of physics being applied for metaphysical/extraphysical and spiritual things. It is kinda pointless to say that “the existence of souls/spirits violate the laws of physics” or “the existence of gods, spiritual beings and post-physical lifeforms violate the laws of physics” because we do not know how those things wrong, besides they’re beyond the realms of physics and it would be just like saying that anything that is outside the realm of physics violate the laws of physics, like “history violates the laws of physics”, “feelings and thoughts violate the laws of physics”, “politics violate the laws of physics” and so on.”

“Facts are pure relative and subjective, they are all dependent of the interpretation of the person in question, as well as of its place of observation and location. Everyone will have different interpretation for most of the facts, and that’s normal, because that’s life, all concepts, ideas, theories and basically everything is relative to the experiences, thoughts and worldviews of the person in question, reality and existence are relative, and that’s good, because that’s part of our human existence and sapient existence.”

“Hey kids, your religion is not false, you can trust in your religion and in your gods and even talk with them if you want, experience it and experience your gods, try to rebut all atheist zealots and militant atheists when they call your religion “false” or related concepts and never let atheist zealots and militant atheists to put your down.”

“People should be able to realize that they are spiritual beings having a human experience, and not simply humans, the problem is that our secular materialist-atheist society lead people to think they’re merely biological robots, and it’s quite wrong, such as think that natural sciences can determine everything about reality, it’s also wrong, natural sciences are limited only to what’s material and physical and not what’s spiritual and metaphysical/extraphysical, but a lot of people cannot understand that and will try absolute everything for deny that, even calling those “pseudoscience”, “antiscience”, “science denial” and so on, and it’s just really absurd and should be countered by religious/spiritual people and people who can realize we are spiritual beings having a human experience.”

“They say that people should be “skeptical” and follow “skepticism” and have “skeptical” education but what they mean is that “all people should be neoatheists, neopositivists and scientists; and follow neoatheism, neopositivism and scientism ; and have neoatheist, neopositivist and scientistic education”. That’s just what they mean by terms like “skeptic” and “skepticism”.”

“The beliefs of so-called “believers” (religious and spiritual) are indeed based on evidence, but not on scientific and materialistic evidence, but on evidence in the epistemological pluralistic sense of the word, and they would not believe in something without evidence or the like . The point is that there are many neo-atheists, neo-positivists and scientists claiming to be “doctors”, “scientists”, “scientific propagators”, “physicists”, “neuroscientists”, “psychologists”, “psychiatrists”, etc., but in the end they are all neo-atheists, neo-positivist, scientist and technocrat who wants everyone to become neo-atheists, neo-positivists, scientist and technocrats in the name of "science" and "fighting" the "pseudosciences" and "scientific denialism"."

"A man with no religion is not like a fish that walks without a bicycle, but he is like a fish in still and cloudy water trying to go somewhere, or even a fish in a place without currents and trying to go somewhere. Or rather, a man without religion is like a fish without an ocean current."

"There are mediums who are genuinely mediums, most of them are charlatans, indeed, and those people who say that non-charlatan mediums are "delusional" are the same ones who say that religious people and spiritual people are "delusional", people who believe in gods and spiritual beings are "delusional", people who talks with gods are "delusional", people who believe and support metaphysics/extraphysics are "delusional" and so on, so nevermind them. Genuine mediums, also including genuine sensitive people and genuine people who can talk with gods and spiritual beings, will never try to trick people nor even act like charlatans, they will always tell people what they have to do in case they need and will always say their limits and such. Natural sciences are limited about that since it's beyond natural sciences, and beyond scientific method and positivism-materialism (psychoatheism and neuroatheism included), it's okay to be a medium or a sensitive person or a person who talks with gods and spiritual beings since you genuinely knows how to do that and know your limits as well."

"The limitations of science are based on the fact that a hypothesis must be testable and falsifiable and that experiments and observations be repeatable. This places certain topics beyond the reach of the scientific method. Science cannot prove or refute the existence of gods or any other supernatural entity or post-physical lifeforms and extraphysical lifeforms in general, such as science cannot prove or refute the existence of an afterlife, existence of souls/spirits, astral projection, NDEs, extraphysics, multiverses (in some extent), dimensions that are beyond 3D-4D (in some extent) and spiritual/religious experiences."

"Atheist zealots (neoatheists and militant atheists mainly) are very common on the Internet, mainly on social media, and that's funny to see how much free time they have and how they are nutty zealots to a level they love to label religion/spirituality as "delusion", "ludicrous", "stupidity", "absurd", "schizophrenia", "insanity" and such kind of terms and even put what they say as "absolute" "truths", like in the sence, "the truth is, religion is ludicrious/delusional/stupid/bullshit" and "all religion is stupidity/bullshit/insanity/delusional", it only shows what kind of nutty zealots they are and how they need of label things for exist and act, and sadly, they have lots of religious/spiritual people for whitewash them and they're literally everywhere on the Internet, but still there are religious/spiritual people to counter them and we also have antiatheists on the Internet for counter atheism, neoatheism, atheist fundamentalism and militant atheism as well, so not all hope are lost and it's just we do not give up our struggle and keep fighting on that, as well as fighting on neopositivism and scientism as well."

"There is a difference between believing in "pseudosciences" that are from the hard sciences and that can be explained by natural sciences such as flat earth, climate denial and anti-vaccine, to believing in things considered as “pseudosciences” because they cannot be proven by the hard sciences and which are outside the domain of the hard sciences, such as astral projection, mediumship, spirituality, multiverses, metaphysics/extraphysics, near-death experience, life after death, dialectics, religion, esoterism and the existence of gods and spiritual beings. The problem is that neopositivists and scientists put both in the same package and clearly put religious/spiritual/esoteric people in the same boat as people who believe in flat earth and climate denial. And this is completely wrong and gets to be so absurd, ridiculous, insane, delusional and sickening to the point that when they use these terms to refer to what is outside the hard sciences they are talking about themselves. We should call things like astral projection, mediumship, spirituality, multiverses, metaphysics/extraphysics, near-death experience, life after death, dialectics, religion, esoterism and the existence of gods and spiritual beings as “extrasciences” or “parasciences”, as they are outside the domain of the natural sciences, this is quite simple, but the scientific community and the neopositivists and neoatheists (militant atheists) are slow to understand this or refuse to understand it.”

“If any criticism towards science, materialism, positivism, scientism, atheism, skepticism and rationalism is “science denial”, “antiscience” and “pseudoscience”, then it’s our duty to support and protect science denial, antiscience and pseudoscience.”

“Militant atheism is one of the biggest problems inside science nowadays, everyday, more and more scientists join this militant atheist madness and it’s affecting very hard a lot of people, mainly revolutionary leftists and religious-spiritual people who want to be in peace with science and technology.”

“Both, “classical” pseudosciences and neopositivism lead to quackery for economical reasons. Both depend of capitalism and neoliberalism for exist as well as materialism, secularism and humanism.”

“Science is not in conflict with religion nor religion is in conflict with science, both are about different fields and matters, science is about what’s natural and physical, and religion is about what’s extranatural and extraphysical.”

“Religion and spirituality are in danger with this expressive increase in militant atheism and neopositivism in what they call “scientific dissemination”, which is nothing more than atheistic dissemination, neopositivist dissemination or even technocratic dissemination, and the number of militant atheists and neopositivists within it it becomes frightening, they increasingly try to force spiritual/religious people to become militant atheists and abuse terms such as “delusion”, “pseudoscience”, “quackery”, “scientific negationism”, “antiscience” among others, and disguising militant atheism (mainly psychoatheism and neuroatheism) as “neutral” and “unbiased” science, as well as silencing any criticism of militant atheism, materialism and neopositivism as “pseudoscience”, “antiscience” and “scientific denial” and imposing on everyone their “acceptance” which is the acceptance of what they say as something absolute. Either we all, especially the religious and spiritual people of the world, fight this, or we are going to be silenced and we are going to disappear within 5-10 years."

"Scientific dissemination in Brazil and in the world, but especially in Brazil, is becoming a serious problem for many people, increasingly promoting neopositivism, neoatheism and technocracy as if they were something "neutral", "apolitical" and "ideological", and increasingly force religious/spiritual people to give up their religions and spiritualities to become neo-atheists, mainly through psychoatheism and neuroatheism. Either we change it somehow, through a spiritual-religious-agnostic reaction to scientific disclosure, or we have the right if we are forced to become neo-atheists through what technocratic disclosure does to us. We have to change this before they are consolidated and any criticism or opposition to them is called "scientific denial", "pseudoscience", "quackery", "antiscience", "delusion" among other terms they use."

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"It's okay to be anti-atheist, if people can be anti-theistic and criticize religion-spirituality, then people can also be anti-atheist and criticize atheism, just as people can be anti-scientist and criticize scientism and be anti-positivist and criticize positivism. To be anti-atheist, anti-scientist and anti-positivist and to criticize atheism, scientism and positivism in a fierce way these days is a revolutionary attitude worthy of worldwide admiration!"

"Humans have not even finished exploring the oceans and space and say that multiverses, gods and spiritual beings do not exist and that it is not worth exploring them and exploring what exists beyond space-time, it is very naive to think like that, it must having research and exploration of them, through epistemological pluralism, since they are topics outside the domain of the natural sciences, and studying them by the same means that the natural sciences study nature the physicist will lead to nothing, only with epistemological pluralism and with techniques like agnosticology and deistology to study them and discover more things, and of course, without the abuse of terms like "pseudoscience", "scientific denialism" and "antiscience"."

LOG IN TO REPLY

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**Guilherme Monteiro Jr.**

April 8, 2022 at 4:37 am

"Atheism is rather an ideology, mainly what they call militant atheism (neo-atheism or atheist fundamentalism), atheism is mostly inspired by scientism, materialism, positivism, nihilism... And all these are ideologies, not to mention atheism it needs theism and religion/spirituality to exist, so saying that atheism and antitheism are not ideologies is like saying that anticapitalism and anticommunism are not ideologies. Atheism itself is an ideology, at least not the question of disbelief, but the reaction against theism, religion and spirituality and his philosophical and theoretical part.”

“It’s okay to be extramaterialist, extranaturalist and extraphysicalist and write and support extramaterialism, extranaturalism and extraphysicalism, that’s fine with it. Just as it’s okay to support anti-materialism, anti-naturalism and anti-physicalism, there’s no problem in that. Our society does need more people who support theories such as extramaterialism, extranaturalism and extraphysicalism and more people who defend and support them as well as defend and support postmodernism and continental philosophy, it’s something we really need these days. current and that we need to fight to avoid the hegemonization of materialism, physicalism, naturalism, positivism and analytic philosophy, or we do something about it, or we will disappear within 10 years.”

“Equality is not a false god… It’s actually a true god that gives hope and dreams with humanity, that gives humanity what can be good for humanity, that makes humans dream with a better world and fight for a better living, equality is the god that brings humans together as one, it’s what brings the sense of community and society to everyone, it what gives hope in a socialist/communist world, it is what makes humans to fight injustice and oppression. Equallity never was, never is and never will be a false god as long as there are other gods, humans and beings around it for make its goals to happen and bring the world a better and brighter future.”

“The abuse by neo-atheists, neo-positivists and scientificists of terms such as “delusion”, “bizarre”, “pseudoscience”, “ridiculous”, “schizophrenia”, “psychotic”, “insane”, “absurd”, “scientific denialism”, “antiscience” and the like is something that gets to be unbelievable and quite dangerous, where any and all questions or criticisms of them are summarized and reduced to some of these terms, and this is something that people who are victims of them, especially people Religious and spiritual people should fight, before it’s too late, the idea of reducing any idea or concept to the terms mentioned above becomes a reflection of what they actually do, especially terms like “absurd”, “ridiculous”, “bizarre” , “delusion”, “psychotic”, “insane” and “schizophrenia”, because that’s what they really are, mainly neo-atheists (psychoatheists and neuroatheists mainly), scientificists and neo-positivists, mainly the so-called part of the “scientific dissemination” that I owe to be called “neo-atheist dissemination”, “scientificist dissemination”, “neo-positivist dissemination” or even “technocratic dissemination”, which only really has scientific aristocracy in terms of technocracy.”

“Since militant atheism (neo-atheism) and neo-positivism have become hegemonic in the “revolutionary” Internet left in Brazil, then only we, from the active revolutionary left that seeks revolution, should unite against militant atheism and neo-positivism in all its possible forms and do grassroots work against militant atheism and neopositivism. Either we do that, or the left will become reactionary in the sense of supporting militant atheism and neo-positivism, and we will lose several religious comrades to the conservative right and so-called religious "fundamentalism" as a massive reaction to militant atheism and neo-positivism."

"The so-called "skepticism" that the so-called "skeptics" promote on the Internet are all neo-positivists and neo-atheists who promote neo-positivism, neo-atheism and scientism disguised as "skepticism", rationalizing the dominant ideology, in addition to promoting neo-positivism, neo-atheism and scientism in a way rationalized, and still having several people to defend them, people who support and rationalize the dominant ideology and only "criticize" or "question" it when it is to criticize something they are against, like religion, spirituality, esoterism and metaphysics. Today's skepticism is just a rationalized and disguised version of neoatheism and neopositivism, whenever you hear or read some "skeptic" on the Internet who talks about "skepticism" change "skepticism" to "neoatheism", "neopositivism" or "scientism " and you'll see what they really are."

"If atheist zealots (militant atheists, neoatheists and anti-theists mainly) enjoing labelling religion/spirituality/metaphysics as "irrational", "delusional", "ludicrous", "insane", "psychotic", "schizophrenic" and such terms and still create atheist/rational fundamentalist things such as "Rational Imperialism (Polcompball Anarchy ideology)", psychoatheism, neuroatheism and such things, then we, religious people, spiritual people, OTMSN people and metaphysics people, have full right counter-attack and to massively criticize and question atheism (militant atheism , anti-theism and neoatheism mainly), positivism (neopositivism mainly), scientism, materialism, rationalism, empiricism, eliminativism and so on, and even more (three times more mainly) if they start calling us "antiscience", "pseudoscience promoters" and "deniers of science" because of that, we won't give up and we will counter-attack mainly, and create blogs, pages, channels and profiles on the Internet for do that mainly and never give up our rightful struggle against atheism, positivism, materialism, rationalism, empiricism, scientism, eliminativism and so on."

"If antitheism exists, then anti-atheism and anti-antitheism have a full right to exist and to be promoted as well. The fight against antitheism and against atheism must be done using the same tactics that antitheists and atheists (neo-atheists and militant atheists) use on the Internet and in real life, so that we can balance this issue by having two sides fighting on the same level."

"It's funny how neopositivists and technocrats, especially neuroatheists and psychoatheists, say that we can't use a single scientific article or scientific study to jump to conclusions, and that's exactly what they, especially neuroatheists and psychoatheists, do against religion, spirituality, esoterism, metaphysics/extraphysics, multiverses, postmodernism, anti-positivism, anti-materialism, anti-atheism, anti-neuroatheism, anti-psychoatheism, anti-neopositivism and existence of gods and spiritual beings. And still calling any criticism or questioning against it as "scientific denialism", "antiscience", "pseudoscience", "delusion" among other terms."

"Humans aren't born atheists, one can easily say that humans aren't born atheist because they lack position about atheism as well as they do not have well developed brain system for that, telling that "humans are born atheists", is just like say "humans are born apolitical", "humans are born aideological", "humans are born stateless" and "humans are born centrist". It's very pointless to say that, and it's even more pointless to say "atheism is natural for human beings" because it's like say "apoliticism is natural for human beings" and "centrism is naturalfor human beings". So, indeed it's a very harsh issue to discuss nowadays. If it was to give an answer, humans are born with the absence of theism-atheism as well the absence of politics, ideology, spirituality and epistemological position and they'll get that when they are growing as human beings and as persons."

"Evidence-Based Spirituality, also known as Scientific Spirituality, Evidence-Based Spiritualism and Scientific Spiritualism, is a form of spirituality that seeks the development of a scientific approach on spirituality and the search for spiritual evidences for spirituality, it opposes the notion that evidences are only highly stringent, repeatable, double-blind, peer reviewed, materialism-compatible research, for all phenomena and it believes in "Different Methods for Different Domains" and in Epistemological Pluralism in order to study spiritual phenomena like Near-Death Experiences, Astral Projection, Mediumship, Out-of-body experiences, Spiritual phenomena, Spiritual experiences, spiritual healing, spirits, souls, consciousness, afterlife, extraphysics, extraphysical life, spiritual worlds, other dimensions and so on. Evidence-Based Spirituality also opposes the notions of scientism and neopositivism and it often uses the notions of extraphysicalism, extramaterialism, extranaturalism and spiritualicism for its studies and the separation of spiritual sciences from natural sciences where natural sciences cannot determine spiritual things and it's a thing that only spiritual sciences can actually determine. The notion of evidence-based spirituality might be really good in order to counter the material reductionism and the neopositivism inside the spiritual community and scientific community and the development of spiritual sciences and even lead into new discoveries related to spirituality and everything related to it."

"Scientific evidence and scientific validation do not prove anything, they only proves that "x has correlation with y" and/or "x is caused by y", and of course both are very limited and restricted into what's material and natural. If a thing does not have scientific evidences nor scientific validation does not automatically mean this is false or science "disproved" it, some examples are soft sciences, philosophy, metaphysics/extraphysics, multiverses, existence of gods and spiritual beings, astral projection, mediumship, spirituality, religion, esotericism and life after death, of course science can attempt to answer those things inside their limits, but most of those things are outside the realms of science, mainly hard sciences. You cannot say that "if you cannot prove it scientifically it's automatically false", it's scientism, neoatheism and neopositivism at its most, most scientific disseminators do a very big mistake doing that, scientific dissemination/communication as it exists today and this madness against "science denial", "antiscience" and "pseudoscience", besides the whole "science = atheism", "science disproves religion/spirituality…", "x and/or y are mumbojumbo", "most scientists are atheists", "scientists should be militant atheists" and such things, are a very bad example for science and bring shame to many scientists and science lovers as well, there's a big difference between no scientific evidence/validation to something like flat Earth, climate denial, antivax from something like religion, spirituality, metaphysics and existence of gods and spiritual beings, but some people, mainly logical positivists and militant atheists, will say both are the same thing, and this is just as bad as people who are religious fundamentalists and flat Earth supporters, that's the why I myself call them "atheist zealots" and "scientistic zealots" because that's what they are."

"Science denial, antiscience, and pseudoscience are not always bad; first: scientific knowledge must indeed be questioned and criticized, as well as science and the concept of "scientific evidence"; second: neopositivism, neoatheism and scientism must be criticized and fought against; third: being "anti-science" is sometimes necessary, especially in a world of scientism, neo-atheism and neo-positivism; and fourth: not always everything that is "pseudoscience" is automatically false and bad, but they are simply outside the domain of the natural and hard sciences, such as religion, spirituality, esoterism, occultism, hermeticism, metaphysics/extraphysics, psionic-kinesis (psionkinesis ), astral projection, life after death and existence of spiritual beings and gods."

"God is not a "failed" hypothesis, nor even the existence of gods and spiritual beings are "failed" hypothesis, their existence simply cannot be proved or disproved by hard sciences, they are beyond hard sciences, that's the why of the idea of the creation of fields like spiritual sciences, deistology, agnosticology and such for the study of gods and spiritual beings. Telling that the idea of gods and spiritual beings are actually a "failed" hypothesis together with several extreme materialism and extreme atheism is the purest form of atheist fanaticism, atheist extremism and militant atheism, and it shall be countered by groundwork against atheist fanaticism, atheist extremism and militant atheism."

"Atheist zealots and atheist extremists will always deny they are atheist zealots and atheist extremists, they will do absolutely everything for deny they are and even trying to use all of their best arguments in order to attempt to show they are not atheist zealots nor atheist extremists. That's the why it's very pointless to try to show an atheist zealot or an atheist extremist they are atheist zealots or atheist extremists. The best you can do is avoid them in all places you can, mainly on the Internet, remember atheist zealots and atheist extremists have an even worse mind than of religious zealots and they, atheist zealots and atheist extremists, are the true "delusional" and the true "irrational" ones, just see their behaviour and their arguments and you can realize that, it's pointless to argue or deal with them, the best you can do is ignore them and/or make non-atheists aware of them in order to enable a worth countering against atheist zealots and atheist extremists as well."

"There are things beyond matter and the spacetime that we are unable to imagine and realize, and most of them cannot be measured and calculated as "natural" ones."

"The concept of "delusion" is a bad concept, because it's impossible to determine if someone is delusional based on "evidences showing the opposite", actually, at this point, everyone would be considered as delusional since evidences would show the opposite for anything a person believes. And the idea that delusion is believe in things "without" "evidence" is also pointless, because it means that people who believe in hypothesis or in purely philosophical things are delusional, and only fully materialistic and fully scientistic views would be supported, and it's also pointless, because materialism and scientism can also be considered as delusional for its restriction to the meaning of "evidence", and also, a person being called "delusional" would do anything for prove they aren't delusional, it's for basically everyone that have, and also, the concept of "delusion" is relative and subjective, because it depends of the background of the person in question; like atheists can believe religious-spiritual people are "delusional" as well as religious-spiritual people can believe atheists are "delusional", and so as rightists can believe leftists are "delusional" as well as leftists can believe rightists are "delusional", the concept of "delusion" is very vague and very pointless, as well as the concepts of "irrational", "psychotic", "insane", "crazy", "schizophrenic", "absurd", "mental illness" and so on, those concepts are relative and subjective to the background of the person in question, and the same explanations can be used such as one can say that "atheism, materialism and scientism are irrational" as well as say that "religion, spirituality and metaphysics are irrational", not denying that there are genuinely delusional people and genuinely irrational/crazy/insane people, but those concepts, as they are mostly used on the Internet and daily, they are relative and subjective."

"Religion and spirituality are neither delusions nor irrational, as they are based on their own evidence and rationales/logics, and are just as valid as the materialist versions of both. Just as they are neither pseudoscience nor "antiscience" and "scientific negationism", as they are outside the domain of the natural sciences and have their own field of study that does not conflict with the natural sciences."

"Atheist zealots and atheist extremists will always deny they are atheist zealots and atheist extremists, they will do absolutely everything for deny they are and even trying to use all of their best arguments in order to attempt to show they are not atheist zealots nor atheist extremists. That's the why it's very pointless to try to show an atheist zealot or an atheist extremist they are atheist zealots or atheist extremists. The best you can do is avoid them in all places you can, mainly on the Internet, remember atheist zealots and atheist extremists have an even worse mind than of religious zealots and they, atheist zealots and atheist extremists, are the true "delusional" and the true "irrational" ones, just see their behaviour and their arguments and you can realize that, it's pointless to argue or deal with them, the best you can do is ignore them and/or make non-atheists aware of them in order to enable a worth countering against atheist zealots and atheist extremists as well."

"Atheist zealots and scientistic zealots say that people want to get "money" by making hypothesis/theories and post them somewhere as if atheists (atheist extremists) and scientificists (neopositivists) didn't do that but with "recognition" and for aristocratic reasons."

"Atheist zealots will act as atheist zealots but will never assume they are atheist zealots and will deny it until the end, get used to it next time you're about argue with them or they try to make you angry."

"Nowadays, people will "debunk" everything they dislike and/or disagree, it's called debunkism, but debunkism is pointless because one person can debunk the debunking and then debunk the debunk of the debunking and so on, it will always lead into a never-ending replying process, it's already existed before, but nowadays people decided to name it "debunking", but it's the same as some decades ago, just with another name."

"No, religion and spirituality aren't irrational, actually, they have their own rationality and way of seeing the world, they might be considered "irrational" by a materialist prespective, but if you have a boardly epistemological concept of rationality, it isn't irrational, and also, a religious/spiritual person can say that "believe that there's no gods and no spiritual beings is irrational", "believe there's only matter and nothing beyond it is irrational", "believe that science is the only way to study about the world is irrational", "believe your views/opinions are objective is irrational", "believe in only what can be physically/scientifically proven is irrational" and so on, so basically the concept of "irrationality" and "irrational" are vague as the concept of "delusion" and "psychosis", and yes, religion and spirituality also have their own evidences, epistemologicall speaking, so no, religion and spirituality aren't irrational."

"That is funny how atheist zealots, atheist extremists, scientistic zealots and scientistic extremists define the concept of "evidence" as being only "scientific" "evidences" and "objective" "evidences", it is just dumb, irrational and nonsense, it shows how atheist zealots and scientistic zealots do not know anything about epistemology and how ideological and dogmatic they are, they are the true delusional and irrational people here, they cannot see beyond those "evidences" as well as they think "science" has already discovered everything about the world and the universe and there is nothing more to discover as well as they also think their views and opinions are "objective" and "scientific". They (atheist zealots and scientistic zealots) are the true delusional, psychotic, schizophrenic, insane and irrational people here, and the Internet is filled with people like them."

Criticism of atheism happens when a person debates, discusses or says he does not agree with something about atheism or does not agree with some philosophy, idea or concept of atheism, it is expressing what you think about atheism, for example, the criticism of atheism atheist extremism that exists on the Internet, the critique of psychoatheism/neuroatheism, the critique of neoatheism and the critique of atheist fanaticism. Intolerance to atheism is when a person does not accept atheism or the person is an atheist and starts attacking and not accepting it, for example, a person simply treats another person badly because they are an atheist for no apparent reason, especially if she's not an atheist extremist or anything like that."

"The term scientific religion or scientistic religion is based on the observation that sometimes science-based ideologies and philosophies such as positivism and scientism display features more commonly associated with religion. … Typically, a scientific religion is considered to be secular, but more radical forms of it are also transcendental."

"Atheist fanaticism is a term used to refer to a form of atheism that takes atheism into zealot levels. Atheist fanaticism is commonly used to refer to new atheism and to refer to scientific fanaticism that's a form of fanaticism that takes science (scientism) and positivism into zealot levels and is (almost) always together with atheist fanaticism. "Atheist fanaticism and scientific fanaticism are problematic such religious fanaticism, there are atheist zealots and scientific zealots such as there are religious zealots as well. But we must remember the problem is not atheism itself nor science itself, but take atheism and science (scientism) as an absolute truth and not as relative truths such as all truths actually are." "That's sad to realize how several scientific disseminators on internet are actually scientific atheist zealots and supporters of atheist fanaticism and scientific fanaticism. We must remember science is not equal to atheism and that there are areas of science that requires people to be deist and even agnostic, such as extraphysics, deistology and so many other areas as well.""

"Scientific fanaticism is a term used to refer to a form of fanaticism that takes science (scientism) into zealot levels, seeking to use all possible arguments and tactics to defend scientism and put natural sciences as an absolute truth. Scientific fanaticism is also very common among several scientific disseminators on Internet and it is considered as an advanced form of scientism. "Scientific fanaticism is no better than religious fanaticism, take natural sciences as an absolute truth is literally like take a religious belief as an absolute truth. Scientific fanaticism and scientism are bad such as religious fanaticism and atheist fanaticism actually are, even that scientific fanaticism is just scientism being taken to the extreme." "It's ok to be a fan of science such as be religious, spiritual, deist, agnostic or atheist. But one must avoid becoming fanatical about any of those, there's a big difference between being enlightened and being a fanatical, one can be enlightened by any of those such as one can be fanatical by any of those.""

"Cultural Atheism, also atheist reformism or progressive atheism, is a political, social and spiritual-religious theory that believes that secular countries, such as the whole world as well, are slowly drifting into state atheism, such as the whole scientific community, scientifc consensus, psychology, psychiatry, neuroscience and all other scientific fields are slowly drifting into new atheism and into atheist fanaticism and scientific fanaticism. Such as the humanity as well is slowly drifting into becoming less religious and spiritual and become more atheist and even supporters of atheist/scientific fanaticism. "Cultural atheism might have some truth on what it says and might sound somehow absurd, but if we realize the growing of state atheist ideas on internet, mainly among scientific, occultist, judicial/legal and secular groups on internet, we can clearly see that cultural atheism is actually a thing." "The biggest proof about how cultural atheism is a thing is several people who work with law inviting atheist zealots and scientific zealots to talk about religious and spiritual things and show that why religion and spirituality should be considered as charlatanism such as what happens on state atheism. And it will eventually lead into "secular on paper and state atheist on practice" countries and then into full state atheism if not countered.""

"Bullshit relativity is the idea that the concept of "bullshit" and related words/concepts are purely relative and subjective, in order words, the bullshit relativity explores the idea that bullshit is a purely relative and subjective thing as well as the concepts of "truth", "reality" and "existence" are also relative and subjective. It also works together with some other concepts such as "offensive relativity" (the idea that offensivity is relative and subjective) and so on. Bullshit relativity also seeks to show how concepts people create become relative and subjective, mainly in this world were Internet is popular and information is very fast."

“The concept of “bullshit” is purely relative and subjective – Concepts such as “bullshit” and related are purely relative and subjective, first of all, what can be “bullshit” for someone might not be “bullshit” for another, people tend to call “bullshit” everything they dislike or disagree, everything that goes against their beliefs and way of thinking, what people think/believe/see/feel is different from each other, so, concepts such as “bullshit” are very relative and subjective, just as the concept of “offensive” and such things, bullshit is no different than that, but yet, people still didn’t realized so and should realize that. Bullshit is purely relative and subjective, and people use the term “bullshit” and related just as they use terms like “offensive” and related.”

“Spiritual awakening is not irrational, nor delusional nor superstitious, it’s one of the most rational things that can happen as well as it takes out delusions and superstitions, and you open your definition of evidence, reality and existence. It can be seen as irrational, delusional and superstitious by non-awakened people, but yet, an awakened person can say that atheism and non-awakening is irrational, delusional and superstitious, it is all a matter of perspective and point of view. Spirituality is one of the most rational things that exist, because you create your own way to see the world and you manage to see how concepts such as “delusion”, “irrationality” and “superstition” are very subjective and relative to the person in question. Same way it’s not science denial nor antiscience, because you manage to see beyond science and see how science is still very limited about a lot of things, and you become aware about how to criticize it and support it without denying it or being against it, and even supporting things such as epistemological pluralism and the notion that science is limited only to the natural. Same we can say for a religious person who is also awakened inside their own religion as well.”

“We still have a lot more for discover about Earth, universe, multiverse, reality, physics, hard sciences, metaphysics, extraphysics, spirituality and so many other things we can actually now, and denying that is denying more discoveries and thinking we have nothing more to discover, and sadly, so many people are like that, mainly on the Internet, and this must be countered and opposed.”

“Is mythology worthless? – No, mythology is not worthless, mythology can be useful for a lot of things, such as giving a national identity, helping people psychologically/mentally/emotionally, help people to discover post-physical lifeforms and post-physical beings, being spiritual, having their own way to see the world and so on. The problem is that we live in an area of scientism (scientistic extremism) and militant atheism (atheist extremism) and people are becoming even more favorable to those things, as well as we can see so many atheist zealots and scientistic zealots supporting state atheism, state scientism, totalitarian atheism, totalitarian scientism… As well as openly supporting ideologies like ingsoc, orwellian ideologies and so on, it’s far better to be a mythological person with connection with nature, universe, post-physical beings (gods mainly) and having their own logic/rationality/mentality than being an insane atheist/scientistic zealot who support orwellian ideologies such as totalitarian atheism (atheosoc) and/or totalitarian scientism (sciensoc/scientosoc) and denying that the second exist means you support/whitewash them. Mythology is not worthless, nor useless, nor dogshit, nor bullshit, nor pseudoscience, nor antiscience, nor science denial, nor anything like those terms people (atheist/scientistic zealots) love to create/use/abuse and then get angry when they're called atheist/scientistic zealots."

"Yes, it's possible to accept evolution and the existence of gods and spiritual beings, as well as it is possible to accept the existence of post-physical aliens/lifeforms and of multiverses as well, the problem is the whole militant atheism thing, but it's not hard, it's just fight militant atheism and atheist extremism and everything will be fine."

""It is not possible to convince a believer of anything. Their beliefs are not based on evidence; they are based on a deep need to believe." – Firstly, the beliefs of the so-called "believers" are rather based on evidence, not on the restricted concept of "scientific" and/or "objective" evidence, but rather on a broad and comprehensive concept of evidence; and they are also not based on a deep need to believe, they would not believe something without proof or evidence, nobody would believe anything without proof or evidence, but they are based on the evidence they have collected to be able to believe what they believe."

"All humans, or nearly, claim that those who have a different experience than the one they are having is delusional. All humans have evidence for why what they are experiencing and believing, but yet, other humans will often say the ones who have different experiences and different beliefs have no "evidence" and that they are "delusional", the concept of "evidence" is so much more than scientific evidences and "objective" evidences, no one would believe in something without having evidences or ways to support that nor even a logical/rational/epistemological/philosophical justification for their experiences and beliefs, all humans have different experiences and beliefs with evidences; communists and capitalists; atheists and theists; continental philosophers and analytical philosophers and the list goes on, even faith and philosophy are based on evidence, as well as spiritual experiences and such, the concept of "delusion", "delusional" and "evidence" are a very relative and subjective concept, as well as reality itself is relative and subject in most of the cases."

"It's very hard to do not believe in gods and spiritual beings studying about hard sciences and soft sciences and seeing the world as well, and it's not hard to believe humans are distant from gods and spiritual beings by seeing how humans are nowadays… Hospitals, hunger, crisis, wars, corruption, extremism of all kinds (mainly atheist extremism), scientism, nihilism… And the lack of ways to solve those problems as well."

"Is delusion a relative and subjective term? – Yes, it is, most of the terms that the term "delusion" are used is something very relative and subjective, as well as the concept of "evidence", there are several meanings of evidence actually, when people associate "delusion" with "evidence" they often mean "scientific" "evidences" and "objective" "evidences", and there are so many more evidences that those two ones, epistemologically speaking, everyone can be considered "delusional" somehow if you use certain kinds of arguments, like a right-winger can call a left-winger "delusional" for "trying to abolish private property and capitalism", as well as a left-winger can call a right-winger "delusional" for "supporting an oppressive system and exploitation of the poor", the concept of delusion is very relative and subjective at some points, atheists call theists “delusional” and theists call atheists “delusional”, skeptics call believers “delusional” and believers call skeptics “delusional”, it’s a very relative and subjective term, and it’s very debatable and questionable sometimes, delusion is not something “absolute” nor “objective”, nor the delusion itself nor the concept itself, it’s something very “relative” and “subjective”, as well as concepts like “bullshit”, “offensive”, “immoral”, “illegal” and so on.”

“Is “bullshit” a relative and subjective term? – In some extended yes, people often call “bullshit” everything they dislike and/or disagree with, there are things that are indeed “bullshit”, but most of the times, bullshit is just like terms like “offensive”, “wrong”, “imoral” and so on”, no different from that, and also, what can be bullshit for a person, might not be bullshit for another person, like a person can say that “religion is bullshit” while other can say that “atheism is bullshit”, bullshit is a very relative and subjective term, well, at least in most of the cases when it’s related about social, cultural, political, religious/spiritual issues. I have a good advice for you, when someone says “bullshit” to you, try to replace it by “lie/lies”, if it makes sense then the term was used correct, and if the sentence doesn’t make full sense and it’s still possible to be debatable, then you argue with the person or do not consider that, it’s a very good advice I give to you in this case, and everytime you do that, you’ll see how concepts such as “truth” and “lie” are purely subjective. And again, it’s alright to argue with someone when they call something you support/think “bullshit”, if you replace it by “lie” and the sentence sounds very questionable or debatable, then you do that or simply leave the person alone, it’s that simple, not something very hard to do.”

“The Atheist ISIS is a thing and it is happening worldwide, mainly on the Internet, atheist extremism and militant atheism shall be countered, as well as the whole Atheist ISIS plan and the Scientistic ISIS subplan. Atheist ISIS is what atheists do abusing of terms such as “delusion”, “schizophrenia”, “psychosis”, “mumbojumbo”, “irrationality”, “evidence”, “pseudoscience”, “science denial”, “reality”, “science”, “antiscience” and so on, as well as the execution of the whole psychoatheism and neuroatheism things, the Atheist ISIS is happening silenciously, together with cultural atheism and the spiritualicide as well, we shall fight the whole Atheist ISIS and defeat the Atheist ISIS as we did with the Islamic ISIS, or we do that, or we are going to have a whole totalitarian-extremist atheist terrorist regime worldwide that will do all kinds of atrocities possible to imagine, and we shall fight their propaganda and memes as well.”

“”Mumbojumbo” is a bad concept, because it can be applied into literally everything that exists, and it is a relative and subjective concept, it can be applied to atheism, scientism, materialism, skepticism and literally anything that exists, such as the concepts of “bullshit”, “delusion”, “ridiculous”, “absurd”, “gibberish” and so on.”

LOG IN TO REPLY

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**Guilherme Monteiro Jr.**

April 8, 2022 at 4:43 am

“Memes and cartoons distort reality even more than fake news and “disinformation”. And it is not difficult to see this with the propaganda machine of neopositivism, militant scientism, scientific fanaticism, scientific fundamentalism, scientific extremism, militant atheism, atheist fanaticism, atheist fundamentalism, totalitarian atheism, state atheism, and atheist extremism, not to mention the propaganda machine of rightism, capitalism and neoliberalism. Just as “scientific articles” and “scientific studies” can do as much damage as the so-called fake news and disinformation, especially when they are mentioned by so-called “scientific disseminators” who are basically neopositivists, militant scientists and militant atheists trying to promote neopositivism, militant scientism and militant atheism in every way possible through so-called “science”, mainly “evidence-based science”, where scientific evidentialism and empirical evidentialism are the basis of so-called “evidence-based science” and neopositivism, scientism militant and militant atheism of the same.”

“Scientific evidentialism – Scientific evidentialism is a form of scientism and neopositivism that argues that someone can only believe or defend something if they have scientific evidence. Where scientific evidence is the only way and thing to determine what is real and what is not real.

Scientific consensusism – Scientific consensusism is a form of scientism and neopositivism that holds that everyone and everything should be based on or in accordance with scientific consensus, eliminating anything that is contrary to it or outside it, as well as criticism and questioning. to scientific consensus.

Scientific acceptanceism – Accepting science without question or criticism, being completely scientistic, militant atheist and neopositivist, defending scientism, militant atheism and neopositivism in a fanatical, or fundamentalist, or even extremist way. And calling everyone who disagrees with scientific acceptanceism “scientific denialism” and “scientific denialists.”

“One of biggest issues of the concept of delusion is that we can’t really determine delusion based on evidence because we have no evaluate what evidence is valid or not valid, since all forms would be evidentialism. Such as determining delusion based on empirical evidence would be empirical evidentialism, and determine delusion based on scientific evidence would be scientific evidentialism. Implying the concept of delusion is equal to evidentialism when it is not. And absence of evidence is not the same thing as evidence of absence, and it is one of the biggest issues of evidentialism, and evidence is also relative and subjective as well.”

“Quora should come with a health warning. It’s not really a place to obtain sound advice nor balanced, well-informed answers. Better to consult a doctor, a mental health professional, lawyer, social scientist or get books on the subject you’re interested in and read more! Or even talk with your closer friends or with people you trust! There are kind and/or very well-informed members of Quora and people genuinely wanting to help or seeking answers but they are a few, and it’s otherwise swamped with jerks, trolls, know-it-alls, freaks, people wanting others to give up in life, atheist zealots, irreligious zealots, religious zealots, militant atheists, atheist extremists, irreligious extremists, antitheists, neopositivists, secular humanists, new age people, liberal extremists, capitalist extremists, centrist extremists, right-wing extremists, hardline tankies, fascists, unironic neonazis, neoliberals, human supremacists, white supremacists, black supremacists, racists, misotheists, speciesists, xenospeciesists, theospeciesists, and the pathological. Avoid if you value your mental health and blood pressure level. Beware too it's deliberately addictive. And if you have any kind of anxiety disorder, panic disorder, depression, bipolar disorder, or any level of autism, avoid Quora and nor even read nor click in the Quora results, because it might be very bad for your anxiety disorder, panic disorder, depression, bipolar disorder, or for your autism, and even provoke self-harm or even a suicide attempt. Same way with Reddit, Facebook, Twitter, Instagram, TikTok, YouTube and social media as a whole, of course, but Quora is even worse than they all."

"I wonder, how can someone actually use Quora as reference for something? Quora has no quality control and Quora is filled with morons, freaks, people who want others to give up in life, trolls, cyberstalkers, hackers, atheist zealots, irreligious zealots, religious zealots, militant atheists, liberals, neoliberals, fascists… How can someone actually use this website for something? Quora is as bad as Google, since Google is very biased and Google looks like to be as bad as Quora as well as moronic as Quora. Avoid Quora, Google, Reddit, YouTube, TikTok, Instagram and Facebook."

"Quora is Biased, Atheist and Antitheist

Quora is unfortunately not a Q&A site as much as it claims – I am currently IP banned for 'hate speech' because I posted several questions denouncing militant atheism, atheist fanaticism, atheist fundamentalism, atheist extremism, militant scientism, militant skepticism, human supremacism, xenospeciesism, theospeciesism, kratosism, deicidism, speciesism, antitheism, and misotheism

I recently reported a Quora space in which antitheists and atheist extremists were openly saying things against religious and spiritual people and even saying they all should be murdered or even sent to psychiatric hospitals until become atheists.

And after writing several posts against them and even reporting them to Quora, Quora simply did nothing against them but rather ban me for 'hate speech' against atheism and antitheism, and they also banned me other time for making questions with the words "antiatheist" and "anti-antitheist"

This space on Quora is instigating hatred against the religious and the spiritual based on atheist fanaticism and atheist extremism and could potentially lead to violence against innocent people but Quora took no apparent action instead preferring to ban me for posting some questions against militant atheism and antitheism.

Without mention a lot of atheist, religious and spiritual questions are answered by atheist zealots, militant atheists, atheist extremists and antitheists saying completely unacceptable things and hateful things against the religious and the spiritual and yet they aren't banned, only when they are full atheist extremist. And yet almost no one denounces that publicly, and those atheist zealots, militant atheists, atheist extremists and antitheists are so perverse that they even harass, bully, mock, hack and cyberstalk people who denounce them or report them publicly.

Make of that what you will. Look elsewhere if you want."

"Pantriggerism is a social hypothesis and social statement that states that everyone will try to trigger you everytime and everywhere, and in any situation, something, expected or unexpected, will trigger you. Pantriggerism also states that there's a pantrigger cycle, that is a cycle where the person is triggered, and then they managed to gets calm and then they are triggered again by something expected or unexpected. Pantrigger is a term used to refer to the idea that triggers are everywhere, and certain kinds of person are more susceptible to be triggered. Pantrigger is a term also used to refer to unexpected triggers that come from out of family, friends, social media, the Internet, TV, popular culture, work, school and everywhere, and the person can be triggered by anything. The theory of pantriggerism was created by Guilherme Monteiro Junior, after realizing that he had some kind of "trigger cycle". Pantriggerism is often common between people with anxiety, panic disorder, bipolar disoder, autism and other kinds of people who can get triggered with literally everything."

"So-called "science", including the hard sciences, the soft sciences, the spiritual sciences, the academic sciences, the mainstream sciences, the non-mainstream sciences, and even atheism, agnosticism, philosophy, sociology and the like need self-criticism. and criticism, but I'm not very optimistic that more people will do this… I won't elaborate much because I'm tired and those who understand and know about it can elaborate, even better than I do, on the theme "the necessary criticism and self-criticism inside and outside science and its areas and technologies"."

"I'm already tired and sick of so much nonsense and insanity disguised as "truth" and "sanity". We live in absurd and insane times, mainly coming from the right, capitalists/liberals/neoliberals, "science" and atheists/antitheists/neopositivists/"skeptics"/"free thinkers". And most of the things I've said in my other comments and texts denouncing this show it well… Sad that… And even sadder that only few people can understand me and agree with me… But what can you do. .. Just suffering and getting tired and sad, and taking various medicines to deal with it…"

"I just hated that "scientific study" that says "religion" is the second most boring stereotype second only to sleep. This shows how the world is full of militant atheists and how irreligious militancy and scientistic militancy are taking over the world! How can a person say that watching birds and animals is boring? Bunch of speciesists and human supremacists! And they still say that watching television and doing math is boring, but they say that art and science are not boring! Art and science can be boring, especially coming from these right-wing people, and science can be even more boring if it's purely neopositivist! And they still say that the accounting profession is boring and that data analysis is "boring" and that living in inner cities is boring! What is wrong with this population of England and these volunteers?! I hate these totally absolutist, neopositivist and biased studies that the media, the "scientific popularizers" and Google put as absolute "truths"! You can't help but hate science and not be a harsh critic of science or even be critical anti-science! Now "science" puts stereotypes as an absolute truth! This is absurd! As well as the thing about extremists having "difficulties" to do “complex mental activities”, this is another absurdity! And they still call those who criticize these things “scientific denialists” and “anti-science”! This scientific acceptanceism will still destroy the world! Mainly coming from scientism, neuroscientism, neopositivism, militant atheism, antitheism and scientific evidentialism! Indeed these neopositivist patients put stereotypes as “scientific evidence”, but they are unable to put strong and reliable “anecdotal” evidence/experiences as “scientific evidence”. I am already a critic of science, a critic of atheism and even anti-science. Now these neopositivist universities can do all sorts of studies and get translated into multiple languages and have multiple people agree with them, but studies of the spiritual sciences and evidence-based spirituality are called “pseudoscientific” and “false”. Enough of this nonsense! We live in times of insanity masquerading as “sanity” and sanity masquerading as “insanity”.”

“Criticism and self-criticism are really necessary within the left, as I have been doing for a long time with my comments here on the FRT-PCTB blogs and on Quozio. But we also have to criticize militant atheism, antitheism, rightism, capitalism, neoliberalism, scientism, science, neopositivism, and technocracy in a deeper and more practical way. Criticism and self-criticism are very necessary nowadays, and we need to do even more criticism and self-criticism of the left and everything I mentioned here. We have to actively criticize and combat the right, capitalism, rightism, militant atheism, neoliberalism, scientism, neopositivism, and technocracy. And I agree with what Rosa Luxemburg said, although I would also include part of the comments I made and texts I wrote, which I quoted earlier here, in her sentences and thoughts.”

“Everything is relative and subjective. All ideas, terms and concepts we use are relative and subjective, and it is very easy to realize and spot that. All our world is build by our own observations and experiences, and people should be able to realize that even more. Absolute and objective are full subjects of the relative and subjective, and we can’t scape the relative and the subjective in our lives, in our studies, in our thinkings and in our existences as a whole. And everything is a social construction, because everything is relative and subjective, and social constructions are relative and subjective.”

“Quora is filled with stupids, dumbs, morons, simpletons, freaks, fools, and retards, mainly pretending to be the new Stephen Hawking or the new Albert Einstein or pretending to be like or being the same as Richard Dawkins, Sam Harris, Bill Nye, Dave Farina, Daniel Foschetti Gontijo and other fools like them. You can’t edit these dunce trolls answers. 99% percent of answers I’m looking for are useless, and 99% percent of things I’ve studied or things I can easily find on Google or on specific places are taugh in a way that makes no sense. And we can hardly edit anything. It is basically a trolls only club pretending to be a know-it-alls only club. And the worst thing is that most of those trolls are actually militant atheism, atheist zealots and atheist extremists trying to spread militant atheism, atheist fanaticism and atheist extremism by the most insane, fanatical and extremist ways I could even imagine on the Internet. Reddit, Facebook, Instagram, YouTube, TikTok, Twitter, Discord and other social medias are very similar to Quora on that, but on Quora you can’t even answer someone in the proper way that you are basically deleted and banned from Quora. Reddit and Facebook are similar, but Quora is so many times worse than Reddit and Facebook. And Google often put their "answers" between the top 3 results, Google is dumb and stupid just like Quora, and sometimes Google can have useless results just like Quora, depending of what you're searching on Google, very similar to Wikipedia. And Quora, Google and Wikipedia are equally dump and stupid as well, without mentioning RationalWiki and those "scientific dissemination", "scientific promotion", "scientific communication" and similar websites, they are completely useless, dumb and stupid 99% of the time."

LOG IN TO REPLY

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**Guilherme Monteiro Jr.**

April 8, 2022 at 4:43 am

Sorry for posting ("spamming") some of my quotes here. I seriously hope you will understand me and answer them and comment most of them if you want so. I seriously do not want to lose them and I valuate them a lot…

LOG IN TO REPLY

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**Guilherme Monteiro Jr.**

April 13, 2022 at 2:01 pm

IQ is largely a pseudoscientific swindle
For some technical backbone to this piece,see here.
(Revised draft: added comments on sinister country profiling. Also 1) Used the same data as researchers to find that $R^2$ for IQ-wealth and IQ-income is effectively 0 in spite of the circularity. 2) Turns out IQ beats random selection in the best of applications by less than 6%, typically <2%, as the computation of correlations have a flaw and psychologists do not seem to know the informational value of correlation in terms of "how much do I gain information about B knowing A" and propagation of error (intra-test variance for a single individual). 3) Added information showing the story behind the effectiveness of Average National IQ is, statistically, a fraud. The psychologists who engaged me on this piece — with verbose writeups —made the mistake of showing me the best they got: papers with the strongest pro-IQ arguments. They do not seem to grasp what noise/signal really means in practice. )
Background : "IQ" is a stale test meant to measure mental capacity but in fact mostly measures extreme unintelligence (learning difficulties), as well as, to a lesser extent (with a lot of noise), a form of intelligence, stripped of 2nd order effects — how good someone is at taking some type of exams designed by unsophisticated nerds. It is via negativa not via positiva. Designed for learning disabilities, and given that it is not too needed there (see argument further down), it ends up selecting for exam-takers, paper shufflers, obedient IYIs (intellectuals yet idiots), ill adapted for "real life". (The fact that it correlates with general incompetence makes the overall correlation look high, even when it is random, see Figures 1 and 2.) The concept is poorly thought out mathematically by the field (commits a severe flaw in correlation under fat tails and asymmetries; fails to properly deal with dimensionality; treats the mind as an instrument not a complex system), and seems to be promoted by Racists/eugenists, people bent on showing that some populations have inferior mental abilities based on IQ test=intelligence; those have been upset with me for suddenly robbing them of a "scientific" tool, as evidenced by the bitter reactions to the initial post on twitter/smear

campaigns by such mountebanks as Charles Murray. (Something observed by the great Karl Popper, psychologists have a tendency to pathologize people who bust them by tagging them with some type of disorder, or personality flaw such as "childish" , "narcissist", "egomaniac", or something similar). Note the online magazine Quillette seems to be a cover for a sinister eugenics program (with tendencies I've called "neo-Nazi" under the cover of "free thought".) Note I am finding statistical flaws in Richard Plomin's work — the pope of twin studies (see intransitivity of correlation in my technical addendum; he doesn't get it). Psychometrics peddlers looking for suckers (military, large corporations) buying the "this is the best measure in psychology" argument when it is not even technically a measure — it explains at best between 2 and 13% of the performance in some tasks (those tasks that are similar to the test itself)[see interpretation of .5 correlation further down], minus the data massaging and statistical cherrypicking by psychologists; it doesn't satisfy the monotonicity and transitivity required to have a measure (at best it is a concave measure). No measure that fails 80–95% of the time should be part of "science" (nor should psychology — owing to its sinister track record — be part of science (rather scientism), but that's another discussion).

Typical confusion: Graphs in Intelligence showing an effect of IQ and income for a large cohort. Even ignoring circularity (test takers get clerical and other boring jobs), injecting noise would show the lack of information in the graph. Note that the effect shown is lower than the variance between tests for the same individual!

Fig 1: The graph that summarizes the first flaw (assuming thin tailed situations), showing that "correlation" is meaningless in the absence of symmetry. We construct (in red) an intelligence test (horizontal), that is 100% correlated with negative performance (when IQ is, say, below 100) and 0% with upside, positive performance. We progressively add noise (with a 0 mean) and see correlation (on top) drop but shift to both sides. Performance is on the vertical axis. The problem gets worse with the "g" intelligence based on principal components. By comparison we show (graph below) the distribution of IQ and SAT scores. Most "correlations" entailing IQ suffer the same pathology. Note: this is in spite of the fact that IQ tests overlap with the SAT! (To echo Haldane, one ounce of rigorous algebra is worth more than a century of verbalistic statisticopsycholophastering).
It is at the bottom an immoral measure that, while not working, can put people (and, worse, groups) in boxes for the rest of their lives.
There is no significant statistical association between IQ and hard measures such as wealth. Most "achievements" linked to IQ are measured in circular stuff s.a. bureaucratic or academic success, things for test takers and salary earners in structured jobs that resemble the tests. Wealth may not mean success but it is the only "hard" number, not some discrete score of achievements. You can buy food with a $30, not with other "successes" s.a. rank, social prominence, or having had a selfie with the Queen.

The informational interpretation of correlation, in terms of "how much information do I get about A knowing B". Add to that the variance in results of IQ tests for the very same person.

An extension of the first flaw that shows how correlations are overestimated. Probability is hard.

Psychologists do not realize that the effect of IQ (if any, ignoring circularity) is smaller than the difference between IQ tests for the same individual (correlation is 80% between test and retest, meaning you being you explains less than 64% of your test results. ).

Some argue that IQ measures intellectual capacity — real world results come from, in addition, “wisdom” or patience, or “conscientiousness”, or decision-making or something of the sort. No. It does not even measure intellectual capacity/mental powers.

If you want to detect how someone fares at a task, say loan sharking, tennis playing, or random matrix theory, make him/her do that task; we don’t need theoretical exams for a real world function by probability-challenged psychologists. Traders get it right away: hypothetical P/L from “simulated” paper strategies doesn’t count. Performance=actual. What goes in people’s head as a reaction to an image on a screen doesn’t exist (except via negativa).

IQ and wealth at low scale (outside the tail). Mostly Noise and no strikingly visible effect above $40K, but huge noise. Psychologists responding to this piece do not realize that statistics is about not interpreting noise. From Zagorsky (2007)

There is little information IQ/Income. From Zagorsky (2007). I redid the data and found suspicious selection from NLS database that truncates both Income, wealth and IQ in tails which artificially boosts $R^2$. [Will follow up with my own study since $R^2$ appears to be <.01 for Income and ,.02 for wealth, in spite of curcularity of test taking!]

$R^2$ is effectively zero!

Fat Tails If IQ is Gaussian by construction (well, almost) and if real world performance were, net, fat tailed (it is), then either the covariance between IQ and performance doesn’t exist or it is uninformational. It will show a finite number in sample but doesn’t exist statistically — and the metrics will overestimare the predictability. Another problem: when they say “black people are x standard deviations away”, they don’t know what they are talking about. Different populations have different variances, even different skewness and these comparisons require richer models. These are severe, severe mathematical flaws (a billion papers in psychometrics wouldn’t count if you have such a flaw). See the formal treatment in my next book.

Mensa members: typically high “IQ” losers in Birkenstocks.

But the “intelligence” in IQ is determined by academic psychologists (no geniuses) like the “paper trading” we mentioned above, via statistical constructs s.a. correlation that I show here (see Fig. 1) that they patently don’t understand. It does correlate to very negative performance (as it was initially designed to detect learning special needs) but then any measure would work there. A measure that works in the left tail not the right tail (IQ decorrelates as it goes higher) is problematic. We have gotten similar results since the famous Terman longitudinal study, even with massaged data for later studies. To get the point, consider that if someone has mental needs, there will be 100% correlation between performance and IQ tests. But the performance doesn’t correlate as well at higher levels, though, unaware of the effect of the nonlinearity, the psychologists will think it does.(The statistical spin, as a marketing argument, is that a person with an IQ of 70 cannot prove theorems,

which is obvious for a measure of unintelligence — but they fail to reveal how many IQs of 150 are doing menial jobs. So “vey low IQ” may provide information, while “very high IQ” may convey nothing better than random — it is not even a necessary condition.).
It is a false comparison to claim that IQ “measures the hardware” rather than the software. It can measure some arbitrarily selected mental abilities (in a testing environment) believed to be useful. However, if you take a Popperian-Hayekian view on intelligence, you would realize that to measure future needs it you would need to know the mental skills needed in a future ecology, which requires predictability of said future ecology. It also requires some ergocity, the skills to make it to the future (hence the need for mental “biases” for survival). Example: you are designing a car for “performance”. A Maserati will perform best on a track and beat a goat there. But what if you need to cross the Corsican garigue? A goat will be ideal then. In NYC during traffic, pedestrians beat cars. So the notion of “performance” needs to be associated with a specific environment and necessarily predictive of it. (Footnote: Herb’s Simon’s notion of scissors:one blade represents capabilities, the other bladethe situational context.) The “g” because of its mathematical flaws fails to produce a general solution to this.

The Best Map Fallacy (Technical Incerto)
Real Life: In academia there is no difference between academia and the real world; in the real world there is. 1) When someone asks you a question in the real world, you focus first on “why is he/she asking me that?”, which shifts you to the environment (see Fat Tony vs Dr John in The Black Swan) and detracts you from the problem at hand. Philosophers have known about that problem forever. Only suckers don’t have that instinct. Further, take the sequence {1,2,3,4,x}. What should x be? Only someone who is clueless about induction would answer 5 as if it were the only answer (see Goodman’s problem in a philosophy textbook or ask your closest Fat Tony) [Note: We can also apply here Wittgenstein’s rule-following problem, which states that any of an infinite number of functions is compatible with any finite sequence. Source: Paul Bogossian]. Not only clueless, but obedient enough to want to think in a certain way. 2) Real life never never offers crisp questions with crisp answers (most questions don’t have answers; perhaps the worst problem with IQ is that it seem to selects for people who don’t like to say “there is no answer, don’t waste time, find something else”.) 3) It takes a certain type of person to waste intelligent concentration on classroom/academic problems. These are lifeless bureaucrats who can muster sterile motivation. Some people can only focus on problems that are real, not fictional textbook ones (see the note below where I explain that I can only concentrate with real not fictional problems). 4) IQ doesn’t detect convexity of mistakes (by an argument similar to bias-variance you need to make a lot of small inconsequential mistake in order to avoid a large consequential one. See Antifragile and how any measure of “intelligence” w/o convexity is sterile edge.org/conversation/n…). To do well you must survive; survival requires some mental biases directing to some errors. 5) Fooled by Randomness: seeing shallow patterns in not a virtue — it leads to naive interventionism. Some psychologist wrote back to me: “IQ selects for pattern recognition, essential for functioning in modern society”. No. Not seeing patterns except when they are significant is a virtue in real life. 6) To do well in life you need depth and ability to select your own problems and to think independently. And one has to be a lunatic (or a psychologist) to believe that a standardized test will reveal independent

thinking.

This is no longer a regression. It is scientific fraud. A few random points from the same distribution can invert the slope of the regression. (From Jones and Schneider, 2010 attempting to make sense of the race-motivated notion of Average National IQ).

Upper bound: discount the massaging and correlation effects. Note that 50% correlation corresponds to 13% improvement over random picks. Figure from the highly unrigorous Intelligence: All That Matters by S. Ritchie.
National IQ is a Fraud. From engaging participants (who throw buzzwords at you), I realized that the concept has huge variance, enough to be uninformative. See graph. And note that the variance within populations is not used to draw conclusions (you average over functions, don't use the funciton over averages) — a problem acute for tail contributions.
[In fact the seminal study says "for 104 of the 185 countries, no studies were available" and they computed the numbers… from ethnicity. Aside from intransivity of correlation, this is pure fraud.]

Notice the noise: the top 25% of janitors have higher IQ than the bottom 25% of college professors, even counting the circularity. The circularity bias shows most strikingly with MDs as medical schools require a higher SAT score.
Recall from Antifragile that if wealth were fat tailed, you'd need to focus on the tail minority (for which IQ has unpredictable payoff), never the average. Further it is leading to racist imbeciles who think that if a country has an IQ of 82 (assuming it is true not the result of lack of such training), it means politically that all the people there have an IQ of 82, hence let's ban them from immigrating. As I said they don't even get elementary statistical notions such as variance. Some people use National IQ as a basis for genetic differences: it doesn't explain the sharp changes in Ireland and Croatia upon European integration, or, in the other direction, the difference between Israeli and U.S. Ashkenazis.
Additional Variance: Let us return to the point of the correlation test-retest. Unlike measurements of height or wealth, which carry a tiny relative error, many people get yuugely different results for the same IQ test (I mean the same person!), up to 2 standard deviations as measured across people, higher than the sampling error in the population itself! This additional source of sampling error weakens the effect by propagation of uncertainty way beyond its predictability when applied to the evaluation of a single individual. It also tells you that you as an individual are vastly more diverse than the crowd, at least with respect to that measure!
There is a severe nonlinearity in the correlation test-retest, in addition to the problem of intransitivity of correlation discussed in the technical note. Imagine a chronometer that varies by 1 hour per measurement!
Biases in Research: If, as psychologists show (see figure) MDs and academics tend to have a higher "IQ" that is slightly informative (higher, but on a noisy average), it is largely because to get into schools you need to score on a test similar to "IQ". The mere presence of such a filter increases the visible mean and lower the visible variance. Probability and statistics confuse fools.
Functionary Quotient: If you renamed IQ , from "Intelligent Quotient" to FQ "Functionary Quotient" or SQ "Salaryperson Quotient", then some of

the stuff will be true. It measures best the ability to be a good slave confined to linear tasks. “IQ” is good for @davidgraeber’s “BS jobs”.

Metrification: If someone came up w/a numerical“Well Being Quotient” WBQ or “Sleep Quotient”, SQ, trying to mimic temperature or a physical quantity, you’d find it absurd. But put enough academics w/physics envy and race hatred on it and it will become an official measure.

Notes And Technical Notes

The argument by psychologists to make IQ useful is of the sort: who would you like to do brain surgery on you/who would you hire in your company/who would you recommend, someone with a 90 IQ or one with 130 is …academic. Well, you pick people on task-specific performance, which should include some filtering. In the real world you interview people from their CV (not from some IQ number sent to you as in a thought experiment), and, once you have their CV, the 62 IQ fellow is naturally eliminated. So the only think for which IQ can select, the mentaly disabled, is already weeded out in real life: he/she can’t have a degree in engineering or medicine. Which explains why IQ is unnecessary and using it is risky because you miss out on the Einsteins and Feynmans.

“IQ” is most predictive of performance in military training, with correlation~.5, (which is circular since hiring isn’t random and training is another test).

Plomin who studies heredity doesn’t seem aware of the intransitivity of correlation. Among other flaws (he does not seem to know how to extract heredity, but that’s another problem).

There are contradictory stories about whether IQ ceases to work past a threshold, since Terman’s longitudinal study of “geniuses”. What these researchers don’t get is these contradictions come from the fact that the variance of the IQ measure increases with IQ. Not a good thing.

The argument that “some races are better at running” hence [some inference about the brain] is stale: mental capacity is much more dimensional and not defined in the same way running 100 m dash is.

I have here no psychological references in this piece (except via negativa, taking their “best”), not that I didn’t read these crap papers: simply, the field is bust. So far ~ 50% of the research does not replicate, and papers that do have weaker effect. Not counting the poor transfer to reality (psychological papers are ludic). How P values often — rather almost always — fraudulent: my paper arxiv.org/pdf/1603.07532…

The Flynn effect should warn us not just that IQ is somewhat environment dependent, but that it is at least partly circular.

Verbalism: Psychologists have a skin-deep statistical education & can’t translate something as trivial as “correlation” or “explained variance” into meaning, esp. under nonlinearities (see paper at the end).

The “best measure” charlatans: IQ is reminiscent of risk charlatans insisting on selling “value at risk”, VaR, and RiskMetrics saying “it’s the best measure”. That “best” measure, being unreliable blew them up many many times. Note the class of suckers for whom a bad measure is better than no measure across domains.

You can’t do statistics without probability.

Much of the stuff about IQ of physicists is suspicious, from self-reporting biases/selection in tests.

If you looked at Northern Europe from Ancient Babylon/Ancient Med/Egypt, you would have written the inhabitants off as losers who are devoid of potential… Then look at what happened after 1600. Be careful when you discuss populations.

The same people hold that IQ is heritable, that it determines success, that

Asians have higher IQs than Caucasians, degrade Africans, then don't realize that China for about a Century had one order of magnitude lower GDP than the West.
Responses by Psychologists
Alt-Right groups such as James Thompson

Reactions to this piece in the Alt-Right Media: all they got is a psychologist who still hasn't gotten to the basics of elementary correlation and noise/signal. The fact that psychologists selected him to defend them (via retweets) speaks volumes about their sophistication.
Hack job by one Jonatan Pallesen, full of mistakes about this piece (and the "empiricism"), promoted by mountebanks such as Murray. He didn't get that of course one can produce "correlation" from data. It is the interpretation of these correlations that is full of BS. Pallesen also produces some lies about what I said which have been detected in online comments (e.g. the quiz I gave and using Log vs X ).
Mathematical Considerations

The above is NOT a representation of IQ/Correlation but the mathematical consequences of correlation not being constant.
CURSE OF DIMENSIONALITY A flaw in the attempts to identify "intelligence" genes. You can get monogenic traits, not polygenic (note: additive monogenic used in animal breeding is NOT polygenic).
The Skin in the game issue

Note From Skin in the Game, 1

Note from Skin in the Game, 2

How social scientists have trouble translating a statistical construct into its practical meaning.

https://medium.com/incerto/iq-is-largely-a-pseudoscientific-swindle-f131c101ba39

LOG IN TO REPLY

**Guilherme Monteiro Jr.**
April 13, 2022 at 2:04 pm

I have decided to post this article of Nassin Nicholas Taleb here since I felt it is important for you to talk here. And I am copying and pasting the whole articles here in order for people actually read it, since most of people do not even click on the links. Anyway, I seriously think what Nassin Nicholas Taleb said about IQ is actually true and you should comment what do you think about that. And yes, he is quite right on his article. Same way as me about how biased Google, social media and most of the so called "science popularizers" actually are.

LOG IN TO REPLY

**Guilherme Monteiro Jr.**
April 13, 2022 at 2:05 pm

"The Internet, mainly social media and Google results, and the academia are full of pseudo-intellectuals. And those so called "science promoters", "science communicators" and "science disseminators" are really and very pseudo-intellectuals, mainly the ones who are the so called "skeptics", militant atheists, atheist zealots, militant "skeptics", neopositivists, antitheists, scientificists, militant nihilists, material reductionists, and hardline materialists, they are pseudo-intellectuals with expertise. And yeah, criticism of science and criticism of atheism became a must nowadays, and sadly that very few people can do that nowadays. But yet, we can't give up and allow those pseudo-intellectuals with expertise win without any struggle from our side."

"We must be careful with channels and websites of so-called "scientific promoters" such as Bibi Bailas, Daniel Foschetti Gontijo (if you can call Gontijo a scientific promoter), Pirulla, Revista Questão de Ciência, and Universo Racionalista. For they are all neopositivists, militant atheists, antitheists, militant skepticism, scientisticists, and neoliberal centrists promoting neopositivism, militant atheism, antitheism, militant skepticism, scientism and neoliberal centrism disguised as "science", we must always be careful what they say on their channels , as well as questioning and always looking for and critically reflecting on what they say, mainly neopositivism, militant atheism, antitheism, militant skepticism, scientism and neoliberal centrism, and even becoming a critic of science and a critic of atheism, depending on the case and person. And the so-called "scientific popularizers" are also aristocrats, technocrats and neoliberals too."

LOG IN TO REPLY

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**Guilherme Monteiro Jr.**

April 13, 2022 at 4:27 pm

I mean, I completely disagree about the Karl Popper part of Nassin Nicholas Taleb, and I still think that social sciences and spiritual sciences are valid fields of study, such as I still think that most of the mistakes that Nassin Nicholas Taleb mention in his article pointing out that IQ is pseudoscience are often mostly commited by neopositivists, skeptics, neoatheists, militant atheists and antitheists than people from the field of social sciences. Taleb is quite right about the part related to alt-right, but I also would mention neoliberals, centrists, imperialists, and unironic fascists as well, they often always do that in a lot of cases, mainly when they are leading with people who they disagree/dislike or even with people from third world countries, also from the Global North. I still severely disagree with the part that Taleb supports Popper, and I still think that Taleb should get away of the neopositivism and such things, but yet, I kinda agree with his part of his The Black Swan book, I think it is a good book, at least by what it looks like, but I would make a postmodernist and panrelativist version of the The Black Swan book to show how the concepts he mentioned can also be perfectically adapted in a postmodernist and panrelativist pointview and not only on neopositivism. I still think that most works of Nassin Nicholas Taleb can be translated into a postmodernist and panrelativist point of view and become depopperized and free from the influences of Popper and of neopositivism, and I hope that someone will do that in the future. Social sciences and spiritual sciences are still valid fields of study, and that should be developed and well worked as well. And about the The Black Swan book, I still think that the Narrative Fallacy can be analysed by an epistemological relativist way, as well as most logical fallacies out there, mainly the ones related to the Narrative Fallacy, but I won't develop this more because I think it is unecessary by now. Anyway. I also think that most of Taleb work can be good, but he needs to take away of neopositivism and his work needs to take away from neopositivism and become developed and adapted for a postmodernist and panrelativist way. Anyway, his article about IQ is really good and I liked it, except by the Popper part and by the part where he attacks social sciences as well, being that what he mentioned is mostly done by neopositivists, skeptics, neoatheists, militant atheists and antitheists. And I also think that some of the Taleb work related to economics and politics should be adapted in a socialist and communist outlook as well. Anyway, I felt I had to write that and good luck answering my comments on your blog, Jason.

LOG IN TO REPLY

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